ESTABLISHED IN 1872

PAPER TRADE JOURNAL

With Which Is Combined

Vol. C, No. 11 — Thursday, March 14, 1935

Canadian Paper Companies Reports Favorable

Quebec Pulp & Paper Corp. Makes Moderate Gain In Total Revenue During 1934—Restigouche Co.'s Earnings Increased Materially Over Two Preceding Years—Duke-Price Power Co.'s Earnings Higher, Despite Increased Taxation—Exercises Dominant Influence In Paper and Pulp Industry of Eastern Quebec

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., March 11, 1935—The Duke-Price Power Company, which exercises a dominant influence in connection with the pulp and paper industry in Eastern Quebec, has just issued its annual report, showing that for the year 1934 the company's earnings were higher than in the previous year and that a substantial reduction was made in funded debt. Increased taxation prevented the full effect of this expansion in gross being reflected in net, but this has been more than compensated for by the fact that whereas a year ago it was found necessary to set aside some $527,603 provision for bad debts, presumably in connection with the Price Brothers contract, this year it has not been found necessary to make any such provision. The result is that, after the usual provision for bond interest, etc., and depreciation, there is shown a net profit of $653,996, equal to $3.11 on the common stock, against a net profit for 1933 of $202,786, or $1.18. After payment of $3 a share on the common, there remained a profit and loss balance of $2,798,471 to be carried forward into the current year.

Increased Income from Investments

For the year 1934 Quebec Pulp and Paper Corporation is able to report a moderate gain in total revenue, due mainly to increased income from investment holdings and higher returns from the sale of wood. Total revenue amounted to $56,471, against $40,396 in the previous year. Administration and general expenses, together with fixed and standing charges, aggregated $229,272, leaving net loss of $172,801. Reserve for depletion of timber limits to $28,059, as compared with $11,790, brought total loss for the year before depreciation up to $200,861, against $204,359 in the previous year. This amount was written back from contingent reserve, leaving a total deficit of $2,959,007, the same as at the end of 1933.

Restigouche Co. Has Better Year

The Restigouche Company, subsidiary of the Fraser Companies, recorded a sharp increase in earnings for 1934, as compared with the previous two years. After deducting operating expenses, taxes, etc., earnings amounted to $637,256, as compared with $359,507 in 1933, while net profit amounted to $300,531, as compared with $9,509.

The balance of Restigouche Company at the end of last year reflects a marked improvement in the company's earnings. Current assets nearly doubled during the year, improvement having taken place in the cash position and in inventories. Cash on hand improved from $8,554 to over $108,000 while inventory values increased from $458,000 to $835,000.

During the year, interest payments on the company's 6 per cent sinking fund mortgage bonds were resumed on August 1, 1934, covering interest accrued during February 1934, and subsequent months.

Oriental Market for B. C. Products

A despatch from Vancouver records the return to that city of R. C. Pim, of Pacific Mills, Ocean Falls, and W. Barclay, of the Powell River Company, Ltd., who spent some time in Japan and China in the interests of the paper companies. Mr. Pim stated that, partly as a result of his trip to the Orient, the Up-Coast plant is assured of a market for its output during the next twelve months.

Newsprint and wrapping paper are the principal grades of paper product purchased by Japanese and Chinese dealers at present.

Mr. Barclay also reported prospects of new business in the Orient for the products of the Powell river plant.

Newsprint Plants Seen Near in South

According to press dispatches from Birmingham, Ala., "Establishment of one or possibly two mammoth pine pulp newsprint plants in the South neared certainty today as Southern newspaper publishers in session here endeavored to pledge enough orders for newsprint to make operation of the plants profitable.

"Cranston Williams, secretary of the Southern Newspaper Publishers Assn., said the publishers were within "striking distance" of a goal of 60,000 tons in pledged orders.

"About fifty publishers, he said, conferred with absent members of the association by long distance telephone and had received nearly enough pledged contracts to put them 'over the top.'

"When the 60,000-ton goal is reached, he added, it will only be a matter of time before one plant at least will begin operations."

Chicago Paper Market Improvement Continues

Better Demand Experienced for Various Standard Grades of Fine Paper, Including Bonds, Ledgers, Books and Covers—While Request for Coarse Papers Is Lighter, Condition of Industry Is Considered Sound—Ground Wood Papers More Active

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., March 11, 1935.—There are sound indications that the Spring of 1935 will see the Chicago paper industry actually on the long looked for road to better days. The only thing actually lacking, say commentators, is the last ounce of confidence in the solution of national problems which will, in the language of one Chicago jobber, "remove the last obstacle to a wave of purchasing." The paper market, in virtually all lines, shows improvement from week to week. No sensational spurts are being registered but, because the foundation is now more sound, the gains are held.

Prices are comparatively stable in all lines, while buying orders are growing more numerous and requests are reported to be for more appreciable quantities. The local fine paper market, in particular, is finding the outlook improved and the demands for bonds and ledgers and other grades are being referred to as optimistic indices for the future. Books and covers were reported in better volume and with distinctly better tone.

Papers used in packaging received a stimulus from the splendid packaging exposition held in Chicago during the week and the importance of packaging in merchandising was pounded further into the consciousness of Chicago's business executives. Kraft papers found retail buying a bit slackened although the mill representatives said that from a larger viewpoint the condition in kraft was satisfactory. Newsprint changed little, while ground woods showed some improvement. The waste paper market was watching with interest the advent of the National Waste Material conference which is expected to have quite a bearing on markets in the near future.

Waste Material Convention Plans

The waste paper industry will taken an important part in the deliberations built around the 22nd Annual Convention of the National Association of Waste Material Dealers, Inc., to be held at the Hotel Sherman, Chicago, March 18 to 20. A local executive, Louis Lippa, of the Apex Company, has charge of the arrangements for the entire convention, but it has fallen upon the executive committee of the Waste Paper Institute to make the arrangements for the waste paper division. This committee is headed by David Charak, president of the Federal Paper Stock Company, of St. Louis, who is also the head of the Waste Paper Institute. Others include J. V. Spachner, vice president of the National Association of Waste Material Dealers and an executive of Chicago Mill Paper Stock; Harold Shilling, U. S. Paper Supply Company, also of Chicago; A. V. Letellier, New Orleans; F. E. Wilcox, Kansas City; John Winters, Cleveland; and Paul White, of the Great Eastern Trading Company of New York City.

The program, according to Mr. Shilling, will be built around a forum and code authority meetings to be conducted under the supervision of Mr. Charak. The forum will be a division of the general forum to be arranged by the entire association, while the code discussions will of course center around the perplexing problems confronting the waste paper industry. General talks about business are also planned, although the Waste Paper Institute seems to be steering away from "headline" talks and into the perhaps more productive channels of individual participation of all members in all discussions. This, the Institute believes, is the best method of finding out the problems and working toward the correction of them and participation in the discussions will be most welcome.

Of course the Waste Paper group will take a keen and active interest in the appearance of General Hugh Johnson at the 22nd Annual Banquet, expected to be the high light of the convention.

Packaging Exposition Successful

The Fifth Annual Packaging Exposition, sponsored by the American Management Association and held at the Palmer House, Chicago, during the week of March 4, attracted a lot of attention along with a four-day series of business conferences and merchandising clinics. More than 7500 marketing officials attended the various sessions including many paper executives who came to inspect their own displays and to view other uses of paper in the solving of packaging problems. Tuesday was designated as "progress" day, Wednesday as "marketing" day, Thursday as "production" day and Friday as "materials" day.

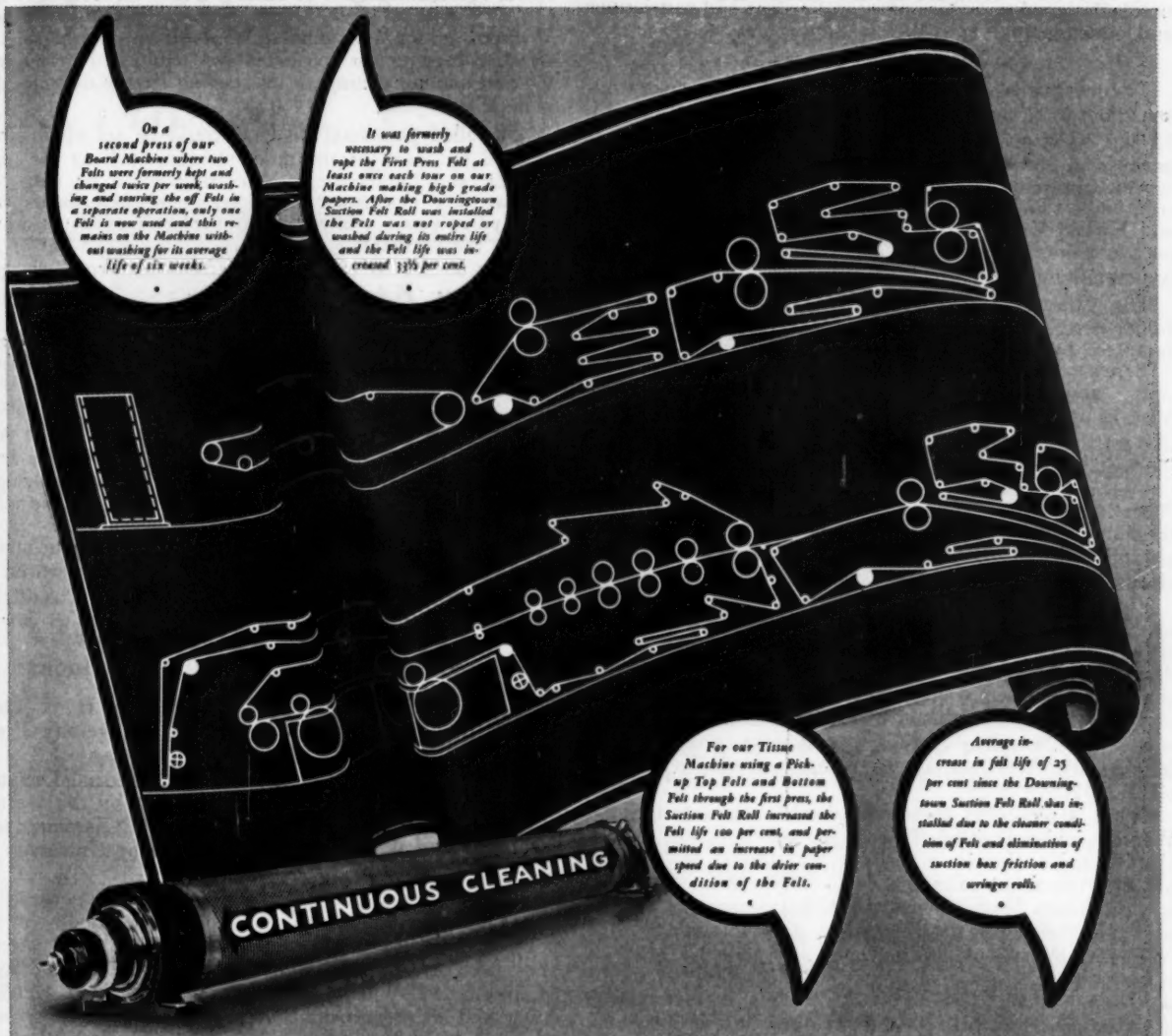
Over fifty manufacturers and distributors cooperated in arranging the attractive and educational exposition. Included were many from the paper industry. One of these, the Riegel Paper Company, displayed its printing and industrial papers, coarse paper specialties and a part of its line of 130 packaging papers. Tom Donaghue, Chicago sales manager, was on hand to assist in the exhibit. Pioneer Paper Stock Company with J. V. Spachner present, displayed its line of packing materials. Brunt & Co. had a composite display of methods used in suggesting packaging designs. Kalamazoo Vegetable Parchment exhibited its "food protection" papers while the Ben Mont Fancy Papers, Inc., and the Bennington Waxed Paper Company, both of Vermont, had splendid educational exhibits. Others allied with the paper industry were Hinde & Dauch, Kimberly-Clark Company, Sefton National Fibre Company and the Tablet and Ticket Company with its comprehensive line of packaging labels.

The sessions were well attended, indicative, says the Association, of renewed interest in opportunities to invade the improved market.

R. E. Wantz Discusses New Legislation

R. E. Wantz, president of the Rockford Fibre Container Company and head of the Illinois Manufacturers Association, recently sent out a widely printed statement calling attention to the perils to the manufacturing industry from new legislation, pointing out that the number of manufacturing establishments in Illinois dropped 30 per cent between 1929 and 1922. The number was 15,333 in 1929 and 10,740 in 1933. "Figures for 1934 will show some improvement over 1933 but the gain will not be appreciable for most industries," said Mr. Wantz, who is widely known in the paper board industry. "Much popular apprehension exists regarding the actual condition of Illinois manufacturers as the result of unduly optimistic reports by some agencies, and the announcements from time to time of some manufacturing concerns which have had some increases. Manufacturing industries generally and particularly those in heavy or capital goods groups, where the bulk of un-

DOWNINGTOWN


On a second press of our Board Machine where two Felts were formerly kept and changed twice per week, washing and souring the off Felt in a separate operation, only one Felt is now used and this remains on the Machine without washing for its average life of six weeks.
It was formerly necessary to wash and rope the First Press Felt at least once each tour on our Machine making high grade papers. After the Downingtown Suction Felt Roll was installed the Felt was not roped or washed during its entire life and the Felt life was increased 33⅓ per cent.
CONTINUOUS CLEANING
For our Tissue Machine using a Pick-up Top Felt and Bottom Felt through the first press, the Suction Felt Roll increased the Felt life 100 per cent, and permitted an increase in paper speed due to the drier condition of the Felt.
Average increase in felt life of 25 per cent since the Downingtown Suction Felt Roll was installed due to the cleaner condition of Felt and elimination of suction box friction and wringer rolls.

FULL SPEED NON-STOP FELT SERVICE

Slowing down the machine as the felts fill-up and shut-downs for washing and roping are both eliminated by the Downingtown Suction Felt Roll. Its continuous, uniform, full width "suction without friction" cleanses and rejuvenates the felt without stretching the felt and without abrasion or compression of the nap. The average service life of all felts is thus prolonged 25% by this gentle, thorough cleaning ▲ ▲ ▲ The diagrams show how the Downingtown Suction Felt Roll replaces a plain felt roll in any position on any machine ▲ ▲ ▲ Roll not removed in changing felts ▲ ▲ ▲ Rear suction eliminates "make" and "break" of suction connections ▲ ▲ ▲ No drive required ▲ ▲ ▲ No maintenance other than occasional oiling ▲ ▲ ▲ The Downingtown Mfg. Co., Downingtown, Pa.

KEEP YOUR FELTS CLEAN WITH A SUCTION ROLL

employment lies, are in a definitely unsatisfactory condition." Mr. Wantz added that if Illinois was to avoid further prostration of its principal sources of income all elements must adopt a helpful and practical attitude toward the problems of the manufacturing industry. He declared the legislative hoppers were filled with radical proposals designed to impose new tax burdens and restrictions and added operating costs on Illinois industries.

News of the Trade

The meeting of the Southwestern Paper Merchants Association, to be held at San Antonio, Texas, on March 14, 15 and 16, is going to draw a comparatively good attendance from the Chicago area. Several of the manufacturers representatives in this territory plan to make the trip, while two, Jack Burrus, Albemarle Paper Company; and Harold Knott, Eastern Manufacturing Company, expect to make the stop during extended business trips carrying them over the southwest territory.

The Chicago Paper Company has recently issued a folder describing Evergreen Folded Toilet Tissues manufactured by the Hoberg Paper and Fibre Company. "There's only one place to test a paper towel," says the copy, "and that is at the washstand." The test is supplied in detail. The toilet tissues are described as feeling like cloth and looking like cloth and a clever microscopic illustration serves to further the impression of quality in the embossed texture. The importance of the process of "borating" is described along with the information that the fibres of the paper are impregnated with boric acid as an antiseptic and healing quality. The selling points are all well grouped and accentuated.

The Swigart Paper Company has two attractive pieces in this week's mail. The first is number six in the series called "Redemption Bond's Letterhead Parade." The folder is printed on Redemption Bond White, substance 20, color descriptions are given along with other merchandising points. Actual samples of commercial letterheads are enclosed. The other mailing provides a price list on Management Bond and a swatch sheet covering white and eight attractive colors.

There is plenty of Commendation for the latest S. D. Warren folder entitled "What, he asked, is the World Coming to?" Here is a message that should get the call of attention from sales offices in every line. The well written folder describes just what the merchandiser must do to overcome the lack of price differentials. "There will" says Warren, "be a new order of selling" in which salesmen must be set to answer specific questions on speed, precision, performance and quality. Thus "salesmen must have complete information—must know exactly what tools, machinery or merchandise will do and why." And thus booklets and bulletins of information must "flow freely" into all hands. And "it is at this point that printing enters."

Frank A. Augsbury Congratulated

[FROM OUR REGULAR CORRESPONDENT]

OGDENSBURG, N. Y., March 11, 1935—Frank A. Augsbury, president of the Algonquin Paper Company, observed his 70th birthday last week and was the recipient of congratulations from friends. In his early life he came here from Pyrites where he was superintendent of the DeGrasse Paper Mill and embarked in the pulpwood transportation business. He was identified with the construction of a pulp mill and later erected the Algonquin Paper Mill which is among the best equipped in the country. Mr. Augsbury also maintains an extensive timber tract in Canada in addition to being vice president of the Ogdensburg Trust Company and the St. Lawrence County National Bank.

For Perpetual Pulpwood Empire

[FROM OUR REGULAR CORRESPONDENT]

SEATTLE, Wash., March 7, 1935—The green timbered area of the Olympic Peninsula may be turned over to the pulp industry as a "perpetual pulpwood empire," if the recommendation of Asahel Curtis of Seattle, member of the Washington State Planning Council's Mount Olympus national monument committee. A program of selective logging for the extensive hemlock districts with the aim of maintaining an everlasting supply of pulpwood is the Curtis plan.

"So-called pulpwood districts could be set up in areas drained by each of the main streams such as the Hoh, Queets, and Quillayute, and cutting could be restricted so that only 'ripe trees' would be used," Mr. Curtis said.

"Hydroelectric current from the main streams would supply the permanent pulp plants. The population of the districts would be almost exclusively pulpwood workers and experts. Subsistence homesteads could be operated in the fertile river valleys also."

Mr. Curtis explained that unless a program of selective logging was provided, the western Olympic Peninsula forests will disappear. Sixty per cent of the timber is fit only for pulpwood. A commercially valuable pulpwood tree can be grown in the area in thirty-five years, he said.

Opposition to the plan is expected to come chiefly from backers of the program of extension of Mount Olympus National Monument from its present boundary five miles west and declaring the area a national park.

"I see no objection to making the monument into a national park," Mr. Curtis declared. It isn't, however, to enlarge the boundaries. The park would be just as attractive and as valuable with the same boundaries as now.

Paper and Its Relationship to Books

Paper and Its Relationship to Books, by R. H. Clapperton, was published by the Oxford University Press, New York, on March 7.

It is the fourth of the J. M. Dent Memorial Lectures. The third, also published in this country by the Oxford University Press, was "The Printer: His Customers and His Men," by John Johnson, printer to the University of Oxford.

Mr. Clapperton has had long practical experience in paper-making, and is responsible for three books on the subject: "Practical Paper-Making" (edited and largely re-written from his father's book); "Modern Paper-Making," 1929 (in collaboration with William Henderson); and his monumental "Paper: An Historical Account of its Making by Hand from the Earliest Times down to the Present Day."

TAPPI Fall Meeting at Atlantic City

The Executive Committee of the Technical Association of the Pulp and Paper Industry has announced that the fall meeting of the Association will be held at Atlantic City, N. J., in September 1935.

William R. Maull, vice president of Dill & Collins, Inc., Philadelphia, Pa., has been appointed general chairman, Harvey P. Cannon of Container Corporation of America, Manayunk, Pa., vice chairman. W. M. Shoemaker of the National Vulcanized Fibre Company is chairman of the Entertainment and Arrangements Committee, G. E. Landt, of the Program Committee and Edward J. Albert of the Publicity Committee. J. C. Harper of the New Jersey Paper Company is Treasurer and Secretary.

The meeting will be sponsored by the Delaware Valley Section of the Technical Association.

Cut Your Broke Handling Costs ... *in half!*

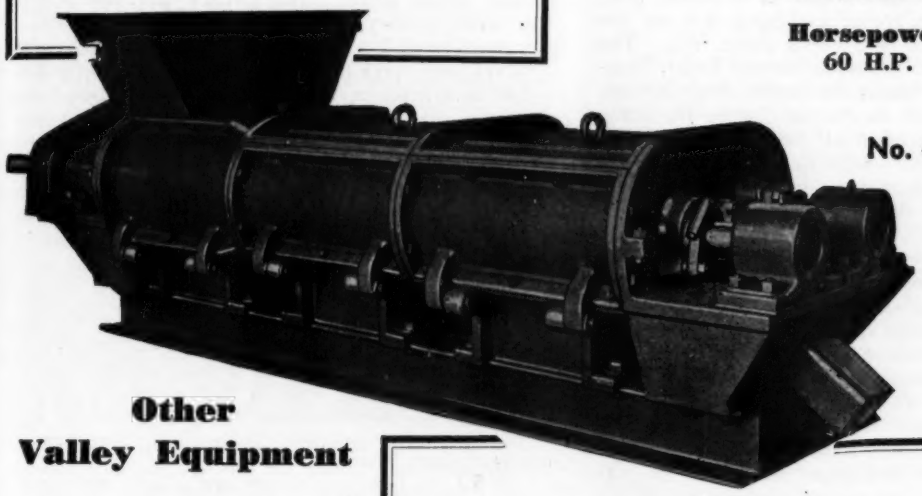
COMPARE THESE KNEADER RESULTS
with your present equipment:

On Hard Sized Papers
1200 to 1500 lbs. per hour

On News and Groundwood
1500 to 2000 lbs. per hour

Mullen Test
2 to 3% variation

Horsepower
60 H.P.



No. 4 Machine

We also build a smaller No. 3 Machine which operates at about 40 H.P. with capacity of 25 to 30 tons.

Other Valley Equipment

Beaters

Voith Stock Inlets

Roll Wrapping Machine

Pumps

Deckers

Screw Presses

Laboratory Equipment

Plug Valves

Flat and Rotary Screens

Jordans

Automatic Felt Guide

Hypoid Gear Drives

THE Valley-Voith Kneader . . . a machine for disintegrating broke, sheet or lap pulp . . . can cut your broke handling costs at least 50%!

Besides . . . the machine takes up less than half as much space as an average Broke Beater and requires only one man to feed.

Thus . . . with space and labor *cut in half* . . . with output per horsepower practically *doubled* . . . besides maintaining a higher Mullen Test uniformity . . . *the important cost-reducing advantages of the Valley-Voith Kneader are at once apparent.*

For further evidence of mill performance and results accomplished, write the Valley Iron Works Co., Appleton, Wisconsin.

VALLEY
IRON WORKS COMPANY

Plant: Appleton, Wisconsin

New York Office: 350 Madison Ave.

Canadian Representatives: Pulp & Paper Mill Accessories, Ltd., Montreal, Canada.

Wisconsin Paper Mill Safety Meetings Planned

Spring Gathering of Wisconsin River Valley Safety Conference Takes Place At Stevens Point on June 14—Fox River Valley and Lake Shore Conferences Scheduled for Sheboygan In May—J. J. Plzak and Fred Cobb to Address Meetings At Menasha

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., March 11, 1935—Enthusiasm for mill safety will be refreshed at sectional conferences scheduled for the late Spring. At a meeting of officers of the Wisconsin River Valley Safety Conference at Wausau, Wis., last week, the date for its spring gathering was set for June 14, and the place is to be Stevens Point, Wis. The conference includes mills at Wausau, Stevens Point, Tomahawk, Merrill, Mosinee, Wisconsin Rapids, Rhinelander, Eau Claire and other points in that section of the state. While the paper and pulp section will be the largest group attending, sections for other industries also will be arranged. F. W. Braun, safety director of the Employers Mutual Liability Company, Wausau, conducted the meeting on arrangements. R. C. Salisbury, safety engineer of Stevens Point, was chosen general chairman.

The Fox River Valley and Lake Shore Safety Conference is to be held at Sheboygan, Wis., in May.

Two local safety meetings for pulp and paper mill workers of Menasha, Wis., have been arranged by Samuel E. Crockett, director of vocational training. The first of these on Monday, March 18, will have as its speakers J. J. Plzak, personnel manager of the Consolidated Water and Paper Company, Wisconsin Rapids, Wis. He is chairman of the Wisconsin pulp and paper section of the National Safety Council. At the second meeting on March 25, the speaker will be Fred Cobb, of Green Bay, Wis., whose subject will be "Present Day Safety Trends." The chairman will be Frank J. Schneller, vice-president of the Gilbert Paper Company.

Demand for Nekoosa Products Expands

Inventions of the Nekoosa Foundry and Machine Works, Nekoosa, Wis., are so in demand in the paper industry that they have found a market in all parts of the world where paper is manufactured. While the output of the last few years has not been up to the company's peak, orders are coming in more satisfactorily, and the outlook is highly favorable. The company has used as high as half a million pounds of pig iron in one year's production.

M. J. Power, founder and president of the company, has been a noted figure for his inventions. Among those on which he holds patents are the Giant Nekoosa bark press, a new uniform chip cutter, the Nekoosa screenings press, the horizontal wood splitter, and the collapsible shaft for paper reels.

The bark press operates under 100 pounds of pressure to compress waste bark into chunks for its utilization as fuel, giving a high potential value to what was formerly an undesirable by-product. The chip cutter has reduced the cost of cooking and the necessity of recooking wood by cutting the wood in uniform seven-eighths inch cubes instead of the irregular sizes formerly produced. By means of the screening press, the rejected knots and screenings from kraft pulp are freed of their water and dehydrated for recooking, thus creating a valuable salvage. The wood splitter has been a boon to paper mills because it can split 200 cords a day. The use of the collapsible shaft facilitates removal of paper rolled upon it and has been a distinct time saver.

A more recent associate with Mr. Power is E. J. Finnegan, who is a designer of machinery made to order. Half a dozen of his inventions are now regular products of manufacture in the plant. He recently designed a machine which wraps, crimps, caps and labels rolls of paper stock as they come from the paper machine. Another machine of his design produces an especially absorbent wood pulp sheet three-quarters of an inch thick. Still another is a machine that packages odd-shaped boxes in cellophane.

Mr. Power's son-in-law, Theodore Olson, became associated with the company in 1929, and is vice-president in charge of sales. Marketing is conducted largely through Fibre Making Processes Company, Inc., of Chicago.

News of the Industry

Assurance of a favorable decision was seen for the first step in the Wisconsin Valley Improvement Company's $15,000,000 water power development because the opposition expressed at a hearing before the Wisconsin Public Service Commission last week proved meager and unimportant. The hearing was on the company's petition to build a dam on the Wisconsin River at Rainbow Rapids, in Oneida county, creating the first of a chain of reservoirs by which eventually the storage capacity will be increased from nine billion to 102 billion cubic feet of water. The only objections to the dam came from four late lot owners. Resort owners in that section were in favor of the dam, believing it would improve fishing as had been the case in similar cases. Officials of the affected townships endorsed the dam because tax-delinquent lands would be removed from the rolls, and a payroll of $100,000 loomed as the source of needed employment. The Improvement company was represented at the hearing by Warren E. Brooks, manager; M. W. Kyler, construction foreman, and Fred W. Genrich, Sr., and Louis A. Pradt, attorneys.

Approximately 1,500 persons were entertained at the "open house" conducted on the evening of March 2 by Badger Paper Mills, Inc., Peshtigo, Wis., celebrating completion of its new waxing department building. E. A. Meyer, president, and other officials acted as hosts. The building was inspected by the visitors, and they spent the time informally or danced to the music of an orchestra furnished by the company. Refreshments were served. A large floral basket was presented to Mr. and Mrs. Meyer by the local American Legion post, which was permitted to charge a small admission fee for the benefit of its treasury.

The two-story concrete and steel waxing building is 160 by 168 feet in size, and provides 33,000 feet of floor space. Its main floor will house the waxing machines, rewinders and dampening machines. The top floor will be used for rewinding waxed paper and bond into lunch rolls and shelf roll. The basement will be used for storage of wax and other materials.

Nekoosa-Edwards Paper Company, Port Edwards, Wis., probably will recover $16,000 to $18,000 in switching charges, following a decision of the Wisconsin Supreme Court upholding a number of suits brought by mills.

Boston Paper Market Conditions Fairly Active

While Some Quarters Report Improvement, Paper Business In General Is Practically Marking Time At Present—Bond and Ledger Papers Moving In Moderate Volume—Demand for Wrapping Paper Fairly Brisk—Box Board Continues Rather Quiet

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., March 11, 1935—Business among wholesale paper merchants in Boston and vicinity continued to average fair during last week, with improvement in some quarters. Bonds and ledgers moved in moderate amounts. Wrapping paper was fairly active. Box board continued rather quiet.

Some changes took place in the paper stock market. In old papers there was more demand for old manila papers, with the price advancing to .60 @ .65 from a former quotation of .50 @ .55. Quantities of mixed papers and old newspapers are reported to have moved, but at the same figures as previously. Mixed papers continued at .20 and old newspapers at .22½ @ .30, but it seems difficult for values to budge any higher. No. 1 kraft was active.

A bit of let-down in the demand for bagging, which was active in the previous few weeks, developed. There was less call for foreign manila rope, the price declining to 1.70 @ 1.80 from 1.75 @ 1.90. Not much is being imported at present. Mill requirements for new domestic rags were not much in evidence. The better demand for roofing stock, under old domestic rags, continued in the No. 1 grade, although there was less call for the No. 2 and No. 3 grades. The price for No. 1 grade continued at 1.17½ @ 1.23½, but No. 2 declined to .95 @ 1.05 from 1.00 @ 1.12, and No. 3 to .70 @ .80 from .87½ @ .92½.

New England Paper Merchants Meet

The March meeting of the New England Paper Merchants Association was held Thursday evening at the Chamber of Commerce Building with 43 in attendance, representing twenty houses. President William N. Stetson, Jr., presided. Reports of the proceedings at the National Paper Trade Association Convention in New York February 18-21 were given by J. H. Brewer as the fine paper representative and Floyd Blackman as the wrapping paper representative, both members of the National Governing Board. Charles A. Esty, retiring chairman of the Paper Trade Code Authority for Region No. 1, gave a brief statement of the present status of the Code.

A resolution was introduced by Joseph Snell, seconded by nearly everyone in the room, and unanimously carried, that "a vote of thanks be extended to Charles A. Esty for the time devoted by him to the work of acting as chairman of the Paper Trade Code Authority for Region No. 1 for a period of a year and a half for the benefit of the trade, and without remuneration," and that the secretary be instructed to spread this vote on the minutes and send a copy to Mr. Esty.

C. A. Spaulding, assistant secretary of the National Association, who came to Boston especially for the meeting, gave an interesting talk on the program being inaugurated by the new officers and particularly urged the full cooperation of the members in backing up the activities of the mill contact committees.

At 8:15 the general meeting was adjourned so that the two divisions could have separate meetings to discuss their divisional problems. In the absence of Vice-President R. M. Stone, Floyd H. Blackman acted as chairman of the Wrapping Paper Meeting. Frank H. Winter presided over the Fine Paper Division meeting.

F. Bendel Tracy has become chairman of Regional Committee of Region No. 1, by virtue of his appointment as a member of the National Code Authority.

Purchasing Agents Convention

The Paper Committee of the New England Purchasing Agents Association will attend the March luncheon meeting of the association at the Hotel Vendome today. The committee will hold its usual meeting on adjournment in one of the Hotel Vendome rooms, according to an announcement by C. H. Dodge and A. V. Howland, of the Paper Committee. At the association meeting, the speaker will be the Hon. George L. Barnes, president of the Associated Industries of Massachusetts; vice-president of the Heywood-Wakefield Company; commissioner of Savings Bank Life Insurance of Massachusetts; former member of the Massachusetts House and Senate, and member of the United States Supreme Court. His subject will be, "What is Industrial Massachusetts Thinking—Planning—Doing?" At the conference at 3:45 o'clock, the subject will be "The Buyer's Contribution to Better Sales Relationship." The conference will conclude with a dinner, at which the principal address will be made by W. J. Jackson, president and general counsel of the United Fruit Company, who will speak on "King Solomon's Purchasing Agents."

News of the Trade

The Dunleavy Company has recently issued a new price list (No. 634), compiled under the Code, in looseleaf form, so that changes can be readily made and the trade kept right up to the minute in regard to values. The company, which manufactures standardized filing and card index supplies, has prepared an attractive brochure of 33 pages, containing information in regard to cards, vertical folders and guides, amply illustrated, together with the prices.

M. B. Jorde, treasurer of the Dunleavy Company, has returned from a business trip through the States between Massachusetts and Virginia, checking the stationery dealers' cooperation with the new Code set-up of resale prices of filing supplies. He found that throughout the district, with the exception of Metropolitan New York, dealers were reporting a most favorable reaction to the Code and that they were doing a more healthy and profitable business from it.

Walter M. Pratt, head of the Pratt Paper Company, has returned from Mexico in which he took trips around the country. He came back through Dallas, Texas, Cincinnati, Philadelphia and Pittsburgh.

The Stone & Forsyth Associates are to have a dinner and dance at the Hotel Touraine March 16.

The Century Paper Company has added to its lines a new paper of the American Writing Paper Company, Chester Vellum, in eleven tints and white and in two regular sizes. The company has also added a new line of halftone folders in eight colors and two regular sizes.

An assignee's sale of Ely Rosenbloom, Inc., paper and paper bags, is to be held today at the Hub Storage Warehouse Company.

Philadelphia Market Trend Definitely Ascends

Persistent Demand for Various Standard Grades of Paper Demonstrates Continued Improvement Over Four Month Period—Supposedly Lost Charter of Paper Trade Association of Philadelphia Discovered In Perfect State of Preservation

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., March 11, 1935—Business in the paper industry here is definitely ascending, and if the trends of the first part of March continue, the results from the month will demonstrate the continued substantial improvement over the four month period.

Original Association Charter Found

Excitement was rife at the headquarters of the Paper Trade Association of Philadelphia in the Drexel Building, when there recently came to light the original charter of this association. This charter which had supposedly been lost, was discovered reposing in the establishment of Garrett-Buchanan Company, who, in the course of making extensive alterations and renovations to their headquarters, came upon this charter, which is in a perfect state of preservation. Norbert A. Considine, president of the Paper Trade Association, told your correspondent that over a period of ten years—to his knowledge—inquiries regarding this charter were made from time to time but no one could shed any light on its whereabouts. Needless to say it is now occupying a very conspicuous place in the office of the Association.

The charter is dated September 26, 1904, and bears the signatures of Joseph B. Mitchell, president, Charles L. Huff, vice president, George W. Rudolph, vice president, John H. Sinex, treasurer, and Benjamin F. Huntzinger, secretary, together with the following as directors: I. N. Megargee, A. Hartung, David L. Ward, Thomas F. Simmons, T. M. Royal, Allen E. Whiting and Edward A. Wilson.

Looking back in retrospect, the signers of this charter represented the outstanding members of the paper fraternity in those days, and in each case their establishments are still in existence perpetuating the ideals of these illustrious men who, with the exception of Allen E. Whiting and T. M. Royal, have passed on to their reward.

Joseph B. Mitchell started in the paper business with his brother-in-law, A. G. Elliott, and under the name of A. G. Elliott & Co. was located at the southeast corner of Sixth and Ranstead streets, which is now the headquarters of the J. L. N. Smythe Company. Mr. Elliott discontinued this partnership about the year of 1904, at which time Mr. Mitchell founded the Quaker City Paper Company, with which he was associated until his death about three years ago.

Charles L. Huff in early years was a bicycle salesman. At the time of the organization of the Continental Paper and Bag Mills of New York, he became their Philadelphia agent, and for a time was also associated with the Union Bag and Paper Company, of New York. In 1895, however, Mr. Huff started in business for himself at the northeast corner of Second and Vine streets and continued at this address until 1898 when he formed a partnership with two other men and the firm was known as Walkley-Riegel & Huff, located at 9 South Marshall street. Later, in 1900 when the Continental Paper and Bag Mills reorganized, Mr. Huff became their Philadelphia sales agent again and continued in that capacity until his death in 1922.

George W. Rudolph was the son of Philip Rudolph and was then located at 16-18 South Marshall street. In 1914 he moved to Orianna and Willow streets, where the business is now conducted under the name of Philip Rudolph & Sons, Inc.

John H. Sinex was in the printing business originally. He was associated with the Whiting Paper Company, located at 18 South Sixth street. In 1903 he acquired control of Garrett-Buchanan Company, which was founded by Sylvester Garrett—father of Sylvester Garrett who is now located at 259 South Third street—and Alexander S. Buchanan. Mr. Sinex died in 1927.

Benjamin F. Huntzinger was employed as salesman by A. G. Elliott Company, then located at 30 South Sixth street. Later in 1905 he was one of the incorporators of the Paper Manufacturers Company, Inc., now at Fifth and Willow streets, of which F. A. O'Neill is president.

I. N. Megargee, founder of the firm of I. N. Megargee Company in about 1890, at 12-14 South Sixth street. Mr. Megargee died in 1907 and his business was acquired by Hartung, Ward and Garrett-Buchanan Company.

A. Hartung was in the paper business approximately fifty years, starting in 1888, when he bought out the E. J. Locke Company, then located on Sixth street south of Vine. Later, Mr. Hartung moved to 24-26 South Marshall street, where he remained until 1912, when he erected the new building at 506-12 Race street, which by the way was the site of the birthplace of Mr. Hartung. Mr. Hartung died about three years ago. The business is conducted by Edward W., A. Richard and Robert L., sons of Mr. Hartung, under the name of A. Hartung & Co.

David L. Ward founded the D. L. Ward Paper Company in 1893. Mr. Ward died in 1914. George W. Ward, present president of this company, and son of the founder, entered the business in 1908. W. Willard Seary, senior vice president, was with the organization during the life time of David L. Ward. The D. L. Ward Company is now in the Terminal Commerce Building, 401 North Broad street.

Thomas Francis Simmons was better known as a member of the waste paper trade than as a new paper dealer. The son of John Simmons, he was briefly engaged in the new paper business during 1895 and 1896 as a member of the firm of Simmons & McKain. In 1897 he became associated with his father and brother, William L. Simmons, in the waste paper business which was founded by the former in 1860 and the firm name became John Simmons & Sons until John Simmons retired in 1902 and the name was changed for the last time to John Simmons' Sons. For a number of years after 1897 this firm engaged to some extent in the sale of new paper, mostly wrapping and boards, but waste paper was always the most important part of the business. John Simmons died in 1907 and Thomas F. Simmons in 1928, but the business of John Simmons' Sons has been continued by William L. Simmons upon the same premises it has occupied for the last seventy years at 30 South Marshall street.

T. M. Royal engaged in the paper business in 1895—exactly forty years ago—in a basement at 401 Arch street.

(Continued on page 49)

Abitibi Power & Paper Co.'s Earnings Improve

Despite Cost of Carrying Idle Mills and Timber Concessions, Company Has More Than Made Operating Ends Meet—Efficient Mills At Iroquois Falls and Sault Ste. Marie, and Bleached Sulphite Plant At Smooth Rock Falls, Run At Full Capacity

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., March 11, 1935—The annual financial statement of the Abitibi Power and Paper Company, Ltd., Toronto, will shortly be issued by G. T. Clarkson, receiver-manager, Toronto. It is understood that it will show earnings higher than the proportionate amount of earnings in the preceding sixteen months applicable to 1933. In the previous period from September, 1922, to December 31st, 1933, the earnings available for depreciation and bond interest were shown at $1,036,562. The amount earned in 1933 would be about $830,000 and it would not be surprising to find that in 1934 earnings were more than $100,000 ahead of this. This will demonstrate the potential value of Abitibi Power and Paper Company.

In spite of the cost of carrying idle mills and timber concessions shown in 1933 at $886,000, aside from expenses incurred annually in connection with the Thunder Bay mill at Port Arthur, which was open part of the year, the company has, nevertheless, more than made operating ends meet by running practically at full capacity the efficient mills at Iroquois Falls and Sault Ste. Marie and the bleached sulphite plant at Smooth Rock Falls. There has not been enough earned yet for bond interest and depreciation together and the bondholders may have to face the fact that there is little chance for them at present prices for newsprint.

It is said that plans are under foot for a complete reorganization of the $84,000,000 Abitibi Power and Paper Company and also for a reorganization of the Great Lakes Paper Company, Fort William, Ont., which is a former Backus concern, and their possible amalgamation. The plans are now reported to be before the Ontario government, which is determined to revive the pulp and paper industry in the province. To enable the Abitibi Company and the Great Lakes Paper Company to end their period of trusteeship and be put on a strong reorganized basis, an amendment to the Judicature Act is almost ready for introduction in the Ontario Legislature. It will remove the obstacles now existing where trust deeds are in the American form requiring one hundred per cent of the bondholders to be present to vote on any offer of purchase. By the amendment, the British form will be made applicable to such companies in trusteeship, by which fifty per cent of the bondholders can decide by a three quarters majority vote on any offer of purchase.

Another feature of the proposals attractive to the government is that the control of both companies and any possible amalgamation would be placed in the control of Canadians and not in New York and Minnesota as formerly. Interested financial groups have assured the Ontario government that the $10,000,000 required for the reorganization of Abitibi and the $1,000,000 for the Great Lakes Paper Company will be forthcoming with governmental assistance to put the Ontario newsprint industry in a strong competitive position.

F. N. Burt Earnings Up

The annual report of the F. N. Burt Company, Toronto, shows common earnings up from 96 cents to $1.15 a share on the 107,644 $25-value shares. The current rate is $2 a share. S. J. Moore, Toronto, president of the company, says that the directors believe prospects for the immediate future justify the continuation of the dividends at this rate. In the boom years the company followed the policy of building up financial strength and adding to surplus. During the depression, it has steadily paid more than it earned, thus returning to shareholders the surplus earnings of former years.

The net earnings in 1934 were $325,445 against $311,686 in 1933 and the net profit in 1934 was $128,017 against $103,145 in 1933. Cash, call loans and marketable securities are down from $682,000 to $640,000. Inventories went up from $706,000 to 736,000. Receivables dropped from $202,000 to $190,000. In spite of a $3,000 increase in federal taxes current liabilities are down. The F. N. Burt Company are extensive manufacturers of counter check books and allied lines.

News of the Trade

Under the provisions of the Ontario Companies Act, the name of the Greensville Paper Company, Ltd., has been changed to the Shipman Paper Company, Ltd. The plant of the company is located at Greensville, Wentworth county, Ont., and turns out about seven tons daily of straw paper for corrugating purposes. T. Hobro is president and general manager of the company.

The prospects are that the mill of the Abitibi Power Company at Sault Ste. Marie, Ont., will run at capacity for some time to come. Capacity production was maintained during February, although a few days were lost in January.

J. M. Dent & Sons (Canada), Ltd., have been granted a provincial charter to acquire as a going concern the business carried on by the Canadian branch of J. M. Dent & Sons, Ltd., of the city of Westminster, County of Lonron, Eng. The authorized capital is $100,000 and among the incorporators of the new organization are Henry Button, John McSlelland and George Stewar, all of Toronto. The new concern is empowered to carry on a general publishing, bookbinding, paper box, stationery and tag business.

In connection with the contracts entered into by the Ontario Hydro Electric Commission to take power from other companies, it is contended by the Ontario government that several of these contracts are not legal and there is a probability that some of them made with power companies outside of the province of Ontario may be repudiated or at least revised. Premier M. F. Hepburn said recently that the people of Ontario has been shackled by the contracts with the Gatineau Power Company owing to the acts of former administrations of the province and that the present authorities were seeking a means of removing the shackles. "We are paying for power we do not need under that contract," added Mr. Hepburn, "and will continue to do so for the next forty years unless some steps are taken to remedy the situation. The money is going to subsidize pulp and paper mills of Quebec, with the result that several northern Ontario mills are now closed."

Obituary

Edwin S. Crabtree

MONTREAL, Que., February 8, 1935—Edwin S. Crabtree, long prominent in the paper industry here, died yesterday at his residence in Montreal West.

Mr. Crabtree was in his eighty-eighth year and had been connected with the paper business practically all his life. Born at Bury, Lancashire, England, he came to Canada in 1892 and occupied the position of mill manager of the firm of Alex McArthur & Co. for a time. Later he bought out the business of Adams Paper Company, Wells River, Vt., and at that time founded the firm of Edwin Crabtree & Sons.

In 1905 he built a paper mill at what was then known as St. Paul de Joliette, which village now bears his name, as "Crabtree Mills, P.Q." He was the active head of the firm until 1916 when he retired at which time the mill at Crabtree Mills was sold to the Howard Smith Paper Mills, Ltd.

He is survived by six sons and one daughter, David Crabtree, of Montreal West; Walter Crabtree, New Zealand, both now retired; Herbert Crabtree, Wells River, Vt., active head of Adams Paper Company, which is still owned by the Crabtree family; Edwin S. Crabtree, of Montreal West, sales agent for several Canadian pulp mills; Harold Crabtree, president of Howard Smith Paper Mills, Ltd., and subsidiary companies; Kay Crabtree, manager of the Crabtree Mills Division of Howard Smith Paper Mills, Ltd., and Mrs. J. C. Smart, of Montreal West.

Dennis Cushman Andrews

Dennis Cushman Andrews passed away Sunday morning, March 3, following complications resulting from an operation two weeks ago. He is survived by his wife. Mr. Andrews was born in Brunswick, Me., in August, 1869, and was 65 years of age at the time of his death. He was educated in the schools at Brunswick and after graduation went to work for the Pejebscot Paper Company, where he got a very thorough training in the manufacture of sulphite pulp.

In 1908 he accepted a position as sulphite superintendent of the Cherry River Paper Company at Richwood, West Virginia. In 1915 he left Richwood to take charge of the new sulphite mill of the Northwest Paper Company, Cloquet, Minn., and held this position until 1918, when he became assistant general superintendent of the company. In 1927 he became purchasing agent for the Northwest Paper Company.

Mr. Andrews' work over a period of 45 years in the paper industry brought him in close contact with hundreds of men in many fields of endeavor, who will all feel the loss of his great inherent friendliness.

He was an active leader in civic matters, particularly as president of the City Park Board and active head of the Cloquet Golf Club. He belonged to the Rotary Club and to the Masonic order.

Henry L. Russell

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., March 12, 1935.—Henry L. Russell, of 244 Oak street, aged 74, for many years president of the Newton Paper Company, died Tuesday at the Holyoke Hospital following a long period of ill health.

He was born in Chicopee in 1861 and moved to Holyoke with his parents, Mr. and Mrs. Robert Russell, when a boy. On the death of his father he was made head of J. Russell & Co., which was established by his grandfather, Joel Russell. He was a member of the Mt. Tom Golf club, one of the founders and first commodores of the Holyoke Canoe club, Holyoke Rotary Club, director of the former Holyoke Board of Trade, and member of the Second Congregational church.

He was also a director of the Hadley Falls Trust Company and trustee of the Holyoke Savings Bank. He was greatly interested in outdoor life and especially fond of fishing. He left besides his wife, who was Miss Susan Newton, daughter of the late Moses Newton, prominent papermaker, before her marriage; two sons, Robert H. and Stuart A., both in business with their father, and one daughter, Mrs. James N. Logan, all of Holyoke. The funeral was held Thursday afternoon at the Second Congregational Church, with burial in Forestdale.

William J. McGarity

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., March 11, 1935.—William J. McGarity, prominent Catholic layman and wholesale dealer in paper stock and paper, died Thursday, March 7, at his home, 4644 Spruce street. Bronchial pneumonia which set in after an operation on January 9 caused his death. He owned the Penn Paper and Stock Company, 1025 North Front street. His firm also had a branch business in Washington, D. C. He had been associated with this industry for thirty-one years. Mr. McGarity was born in this city and had attended the parochial schools. He was a captain of the Men of Malvern Catholic Retreat League, a member of the Union League, Knights of Columbus, Bala Country Club, Penn Athletic Club, Rotary Club and the Big Brothers Association.

Surviving are two sons, William J. Jr., associated with his father in business, and Cornelius J., a law student at the University of Pennsylvania Law School, and a daughter, Cecilia G. Funeral took place with Solemn High Mass of Requiem, at the Church of St. Francis de Sales. Interment was made in Holy Cross Cemetery.

Arthur I. Hooper

[FROM OUR REGULAR CORRESPONDENT]

CORINTH, N. Y., March 11, 1935—Word was received here this week of the death at Ashton, Pa., of Arthur I. Hooper, for many years identified with the paper industry of this section. He was 56 years old. While here he served as a department superintendent at the Hudson River plant of the International Paper Company. Burial services were conducted at Cumberland Mills, Me.

Gets Patents on Condor Compensated Belt

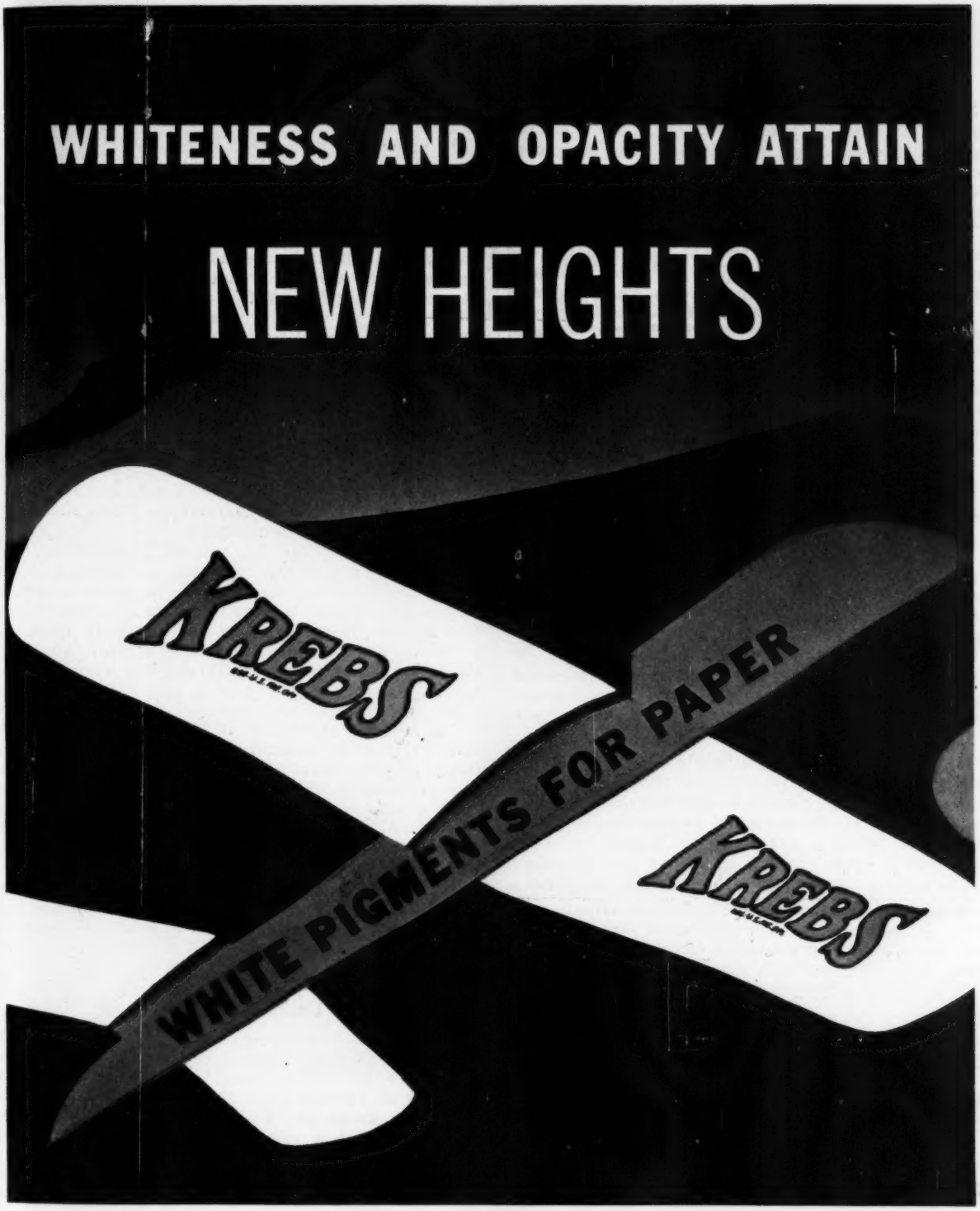
Announcement has just been made by The Manhattan Rubber Manufacturing Division, Passaic, N. J., of patents granted that company for their Condor Compensated Belt —the low tension rubber belt.

By virtue of its construction, ply stresses are equalized when the belt flexes around the pulley. The patent awards exclusive rights of manufacture to the Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc.

New Offices for Solvay Sales Corp.

April 1, the general sales offices of the Solvay Sales Corporation, now located at 61 Broadway, will be moved to 40 Rector street, New York City.

The New York branch of the Solvay Sales Corporation is at present located at 40 Rector street and will continue to maintain its offices at this address.



Krebs Pigment & Color Corp.

Main Office: 256 VANDERPOOL ST., NEWARK, N. J.
Plants: NEWPORT, DEL. NEWARK, N. J. BALTIMORE, MD.

THERE'S A KREBS PIGMENT FOR ALL TYPES OF PAPER

Provides for New Labor Relations Bill

Senator Wagner has introduced in the Senate his Bill No. S 1958, creating a new National Labor Relations Board to supersede the present board. The purpose of the bill is to ensure the right of collective bargaining to employees of concerns doing business in interstate commerce.

The new National Labor Relations Board of three members to be appointed by the President, with the advice and consent of the Senate, shall be given the power to promulgate rules and regulations for the effective enforcement of the Act; to investigate labor complaints of employees against employers; to hear disputes involving unfair labor practices of employers who prohibit, interfere with or discriminate against the free unionization of employees; and, in certain cases, to act as arbitrator in labor disputes arising out of written contracts between employers and employees.

The bill defines guaranteed rights of employees to be—

(1) to form labor organizations;
(2) to bargain collectively with employers through representatives of their own choosing;
(3) to engage in concerted activities for these purposes.

An employer is committing an unfair labor practice who interferes with the guaranteed rights of employees, or dominates or interferes with the formation of any labor organization, or contributes financial or other support to it.

Upon charges or upon reasonable belief that an employer is violating the rights of employees and is committing an unfair labor practice, the board will issue a complaint to such employer, who is then given an opportunity to file an answer and to be heard. If the board finds that the employer has violated provisions of the act, it shall make such findings and issue a cease and desist order to the employer. If the cease and desist order is not obeyed, the board must file the testimony and the findings of the hearing held before it with the proper United States Circuit Court of Appeals, which court may issue a preliminary injunction against such employer. The employer is again given an opportunity to be heard. No objection not raised by the employer before the board shall be considered by the court, except under certain specified conditions. The court shall then either modify or vacate the board's order or enforce the same by decree of permanent injunction.

Labor as well as employer may appeal to the Circuit Court of Appeals from adverse findings of the board.

The decree of the Circuit Court of Appeals is final except as it may be reviewable by the Supreme Court of the United States.

The board as an alternative method of procedure may request the commencement of injunction actions by the various Federal District Attorneys.

The bill is to supersede Section 7 (a) of the N. I. R. A. in the event of conflict.

The proposed bill is one of the most sweeping labor bills affecting the major industries in the United States ever introduced in the Senate or the House. Expeditious trials of labor disputes are the desired proceedings before the board. Complaints may be served upon employers by registered mail or by telegraph. Company unions in the ordinary sense of the term are abolished.

P. E. Hodgdon Heads Deerfield Glassine Co.

Simultaneously with the news that the Deerfield Glassine Company has cleared its receivership, comes the announcement that Paul E. Hodgdon is elected president and treasurer. Mr. Hodgdon has served as general manager, in charge of production and sales, from the time when the Deerfield concern first went into the receivership four years ago. Since that time steady progress has been made, despite the depression. Production difficulties have been overcome by careful selection and addition of new personnel, changes in methods, and the modernization of equipment. The sales picture has been strengthened by a pronounced improvement in quality, but more particularly by the development of several new lines.

Chief among the new products which have been placed upon the market by this concern under Mr. Hodgdon's management are: an entirely new line of Greeting Card Parchments, in many novel color combinations and decorative schemes, new types of more pliable, super transparent papers, as well as a series of laminated and waterproofed transparent sheets for the packaging field.

By this policy of broadening the market and improving quality all the way through, this old New England Mill has been able to pull itself up out of the depression, with a firm, bright outlook ahead. With its varied new processes and equipment, the mill is now in a position to produce special grades of almost any nature as applied to packaging and Greeting Card fields—a factor which has played an important part in the progress which the firm has made during the past year or two.

Mr. Hodgdon has been associated with the paper industry all his life, as his host of friends in the paper field know. He served several years with the Brown Company, both in Canada and this country; was eight years with the Eastern Manufacturing Company manufacturing fine rag bonds and sulphite pulp, and came to Deerfield from the Munising Paper Company of Munising, Mich., where he served as general superintendent of their pulp and paper mills.

Charles N. Stoddard of Greenfield, Mass., for the past four years receiver of the concern, retains contact with Mr. Hodgdon, as chairman of the board of directors. Richard J. Doolin, auditor, will be assistant treasurer under the new set-up.

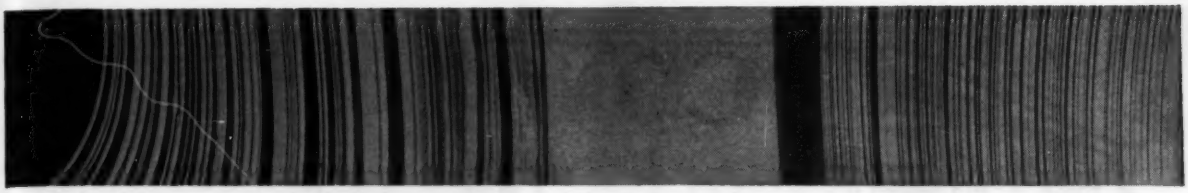
"Tailor-made Sets"

"Tailor-made Sets"—a new idea in anti-friction bearing applications for the paper products industry—are described in a new bulletin issued by the Montague Machine Company of Turners Falls, Mass. Illustrations and diagrams are shown of "Tailor-made Sets" on such machinery as grinders, calender stacks, Jordans, rolls (top couch, press, table, wire return, breast, spring and feet), chippers and winder drums, etc. A free copy will be mailed to those writing to the Montague Machine Company.

H. A. Whiteman & Co. Made Brown Agents

H. A. Whiteman & Co. has been appointed a distributor of BROWN'S LINEN LEDGER permanent record paper in the Wilkes-Barre-Scranton territory.

The paper mentioned is one of the products of the L. L. Brown Paper Company, Adams, Mass.



For Coating and Surface Sizing . . . a pigment that improves **OPACITY, WHITENESS** *and* **BRIGHTNESS** *of Stocks*

● BECAUSE of its high refractive index Titanox-B (Titanium Barium Pigment) is one of the most effective opacifying agents.

Used in surface size or coating mixes, this modern white pigment not only improves opacity but color, brightness and printing qualities as well.

It is readily dispersed and suspended in the mix and because it is chemically stable and inert there are no unfortunate reactions resulting in discoloration of the sheet.

The services of our paper technicians are always available. Just address our nearest branch.

●

TITANIUM PIGMENT CO., INC.

Manufacturers of TITANOX-B *(Titanium Barium Pigment),* TITANOX-C *(Titanium Calcium Pigment)* TITANOX-A *(Titanium Dioxide)*
111 Broadway, New York, N. Y.; Carondelet Station, St. Louis, Mo.; National Lead Company (Pacific Coast Branch), 2240 24th St., San Francisco, Calif.; Canadian Distributor: Wilson, Paterson, Clifford, Ltd., 3552 St. Patrick St., Montreal; 132 St. Helen's Ave., Toronto.

TITANOX

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

St. Marys, Ohio—The Auglaize Box Board Company is considering extensions and improvements in steam power house at mill, including installation of new boiler and other equipment. Estimated cost has not been announced. George M. Fissel is secretary.

Jackson, Miss.—The United States Corrugated Fibre Box Company, 1409 Roosevelt avenue, Indianapolis, Ind., manufacturer of corrugated fiber and other boxes and containers, is considering early construction of new branch plant at Jackson, consisting of one-story brick and steel unit, reported to cost over $40,000, including equipment.

Toledo, Ohio—The Toledo Bottle Cap Company, 1345 Miami street, manufacturer of paper bottle caps of various kinds, milk bottle caps, etc., has approved plans for new addition to plant, to be one-story, 45 x 160 feet. General building contract has been awarded to George W. Lathrop & Sons, 1220 Madison avenue, and superstructure will be placed under way at once. Cost over $30,000, including equipment. Mills, Rhines, Bellman & Nordhoff, Ohio Bank Building, Toledo, are architects.

Buffalo, N. Y.—The Northeastern Container Corporation, recently organized with capital of $80,000, plans operation of local plant for the manufacture of paper boxes and containers of various kinds. Principal incorporators of new company include Omar G. Olds, 445 West Ferry street, and Richard H. Wile, 566 Richmond avenue, both Buffalo.

Charlotte, N. C.—The National Container Corporation, Borden and Review avenues, Long Island City, New York, N. Y., manufacturer of paper boxes and containers, is considering the early establishment of a new branch plant at Charlotte, for the paper and cardboard box trade in this district. Company is said to be arranging for lease of former plant of the Atherton Cotton Mills Company, South Boulevard, Charlotte, to be remodeled and improved for proposed new unit, with installation of equipment. Large capacity will be arranged.

Gloucester City, N. J.—The Gloucester Rayon Corporation has been chartered under Delaware laws with capital of $85,000, and 4000 shares of common stock, to manufacture cellulose rayon products. It is understood that the new company will take over and operate the Furness Corporation, with mill at Gloucester City, manufacturer of similar cellulose rayon specialties, now in receivership. Improvements will be made in the plant under the new ownership and capacity output arranged.

Houston, Tex.—The Southern Container Company, Navigation Building, manufacturer of corrugated and other paper boxes and containers, paperboard boxes, etc., has plans for new one-story building on local site, to be used primarily for storage and distributing service. General contract has been awarded to J. B. Townsend Company, Houston, and it is proposed to proceed with superstructure at once. A building permit has been asked. New unit will cost close to $30,000, including equipment.

Excello, Ohio—The Crystal Tissue Company, Middletown, Ohio, manufacturer of tissue and other paper stocks, will proceed at once with alterations and improvements in steam power house at Excello, recently referred to in these columns. Contract for new boiler unit and certain other equipment has been awarded to the Riley Stoker Corporation, Union Central Building, Cincinnati, Ohio. W. I. Barrows, Reibold Building, Dayton, Ohio, is mechanical engineer for project.

New York, N. Y.—The Berton C. Hill Company, 22 East Fortieth street, paper and paperboard products, has filed notice of change in company name to the Bertchill Paper Corporation.

Wausau, Wis.—The Minnesota Mining and Manufacturing Company, 791 Forest street, St. Paul, Minn., manufacturer of sandpaper and other abrasive paper stocks, etc., has awarded general contract to William M. Murphy & Son, New York Building, St. Paul, for superstructure for new additions to raw material plant at Wausau, recently referred to in these columns. Work will be placed under way at once. The main unit will be one-story and basement, 30 x 300 feet. New conveying, loading, storage and other facilities will be installed. Entire project will cost over $150,000, including machinery and equipment. Toltz, King & Day, Inc., Pioneer Building, St. Paul, is architect and engineer.

Dallas, Tex.—The Southwestern Paper Box Manufacturing Company, recently organized, plans operation of local plant for the manufacture of paper and paperboard boxes and containers. Principal incorporators of new company are David L. Wise and Max R. Rosenfield, Mercantile Building, Dallas.

New Companies, Etc.

Chicago, Ill.—The Durable Coated Paper Company, 227 West Huron street, has been organized with capital of 100 shares of stock, no par value, to manufacture and deal in paper products. The incorporators are Roy G. Fulcher and Edwin L. Briggs.

Waterbury, Conn.—The Waterbury Tag Company has been incorporated with capital of $50,000, to manufacture paper tags, labels and kindred products. The incorporators include Edward T. Carmody, Daniel C. Ryan and Maurice T. Healey, Jr., 111 West Main street, Waterbury. Last noted is company representative.

New York, N. Y.—The Androscoggin Paper and Pulp Corporation, care of the Corporation Trust Company, 120 Broadway, New York, has been chartered under Delaware laws with capital of $10,000, to manufacture

For the want of a NAIL...

a battle was lost!

A few leaky valves or fittings can bleed piping of steam equal in cost to the wages of a laborer. For want of materials many plants today are fighting a losing battle with rising production costs.

Yet replacement is not being made in scores of plants because the plant engineer hesitates to ask for an expenditure. Every economy during stringent years appeared to be money saved. Now, steam lines, power waste and increased production costs demand that the engineer be heard.

To locate losses a thorough and conscientious checkup is necessary. Crane Co. has prepared a Plant Checkup List which it will send to plant executives and engineers. Crane engineers will gladly cooperate in the actual plant survey.

A southern Illinois milk processing company spent $300 for Crane piping and materials to direct engine exhaust steam into a milk evaporator. The company reports a $1,500 annual saving as a result.

Crane quality valves and fittings not only answer today's urgent demand but the long-pull demands of tomorrow. Install Crane equipment now and maintenance cost will strike a low and stay there. Lose no time. Write for the Crane Plant Checkup List today.

CRANE

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO, ILLINOIS • NEW YORK: 23 W. 44TH STREET

Branches and Sales Offices in One Hundred and Sixty Cities

VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL

and deal in pulp and paper products. The incorporators include Charles Oechler and Charles D. Peet, New York.

New York, N. Y.—C. Filiberto & Son, Inc., has been incorporated with capital of 200 shares of stock, no par value, to deal in waste paper products. The incorporators are Cosimo Filiberto, 527 West 29th street, New York, and Emanuel Choper, 3410 Grand avenue, Astoria, L. I.

New York, N. Y.—The Wallpaper Research Corporation has been chartered under Delaware laws with capital of 100 shares of stock, no par value, under the direction of the Corporation Trust Company, 120 Broadway, New York, to operate a research organization in the interests of the wall paper industry. The incorporators include L. H. Herman and D. O. Newman.

Napanoch, N. Y.—The Rondout Paper Mills, Inc., Napanoch, has filed notice of company dissolution under state laws.

May Reopen Oswegatchie Mill

[FROM OUR REGULAR CORRESPONDENT]

GOUVERNEUR, N. Y., March 11, 1935—An option on the paper mill property of the Oswegatchie Paper Company, near here, was taken this week by representatives of a large New England paper concern after several conferences with members of the bondholders' protective committee. The option, however, does not include the pulp mill at Emeryville or the extensive timber property in the Adirondacks. Negotiations were terminated following an inspection of the mill and its equipment which are in good condition and whether or not the mill will be reopened after a suspension of several years is understood to hinge upon the sale of the property to the option holders. The plant is modernly equipped with a 160-inch paper machine installed by the Bagley & Sewall Company which is designed for the production of newsprint and catalogue. Prior to closing, the plant turned out a number of large contracts for mail order houses and it is expected that about 200 hands will be employed if it reopens.

Nelson R. Caswell, former president of the Oswegatchie Paper Company and a member of the bondholders' protective committee confirmed the option but declared that a reopening depends upon its execution and the purchase of the property. Other members of the protective committee include Charles W. Valentine, of the Bagley & Sewall Company, Samuel Child, Harry Goulding and Ivan J. Gotham. The committee took over the property in 1931 pursuant to a mortgage foreclosure judgment following a cessation of operations.

The mill was built in 1922 by the Oswegatchie Paper Company at a cost of about $1,000,000 while the equipment cost in the neighborhood of $250,000. The company was an outgrowth of the Aldrich Paper Company which was destroyed by fire in 1920. If the plant reopens which appears probable the new owners will it is said make a grade of paper for which there is a good market at the present time.

Philadelphia Quartz Broadside

A new industrial alkali, Sodium Sesquisilicate, is described in detail in a broadside published by the Philadelphia Quartz Company, of Philadelphia, Pa.

This is one of their patented materials, which the Philadelphia Quartz Company has introduced as Metso 99. Special features of this new detergent are: high alkalinity, controlled action, freely soluble in water and safe to handle.

Copies of this broadside may be obtained upon application.

TAPPI Notes

Harold Norseen, formerly chemist of the Castanea Paper Company, is now chemist for D. M. Barr Company, Roaring Springs, Pa.

Thomas R. Johnson, formerly technical service chemist of the Canadian International Paper Company, Hawkesbury, Ontario, has returned to England and is now on the technical staff of the Thames Board Mills, Ltd., Purfleet, Essex, England.

A. W. Pesch, Chief chemist of the Southern Kraft Corporation, Mobile, Ala., would like to purchase a copy of Paper Testing Methods. Anyone desiring to sell his copy should write directly to Mr. Pesch.

At the joint meeting of the New England Section of TAPPI and the Connecticut Valley Division of the Superintendents Association at the Nonotuck Hotel, Saturday, March 16, the speakers will be: J. D. Miller of the York Haven Paper Company, who will talk on "Corrosion;" Guy H. Baker of the Duriron Company, will discuss "Corrosion Resistant Materials" and Walter L. Savell of the Mathieson Alkali Company will talk on "The Application of Chlorine in the Pulp and Paper Industry. The afternoon meeting will begin at 2:30 p.m. and in the evening there will be a St. Patrick's Day Dinner-Dance.

The American Chemical Society will hold its annual meeting at the Pennsylvania Hotel, New York, April 22 to 26, 1935. The Cellulose Division will meet on Thursday, April 25th.

Frank Makara is now with Pettingill, Inc., of Chicago, after studying at Columbia University for the past two years.

Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 13, 1935—The Government Printing Office received bids for 61,200 pounds of white sulphite paper at 6.06 cents per pound from the following: American Writing Paper Company, R. P. Andrews Paper Company, Old Dominion Paper Company, John F. Post, Cauthorne Paper Company, Whitaker Paper Company, and Mathers-Lamm Paper Company.

Bids for 5,940 pounds of buff English finish book paper at 5.65 cents per pound were received from Barton, Duer & Koch Paper Company and P. H. Glatfelder Company.

The Government Printing Office has announced the following paper awards:

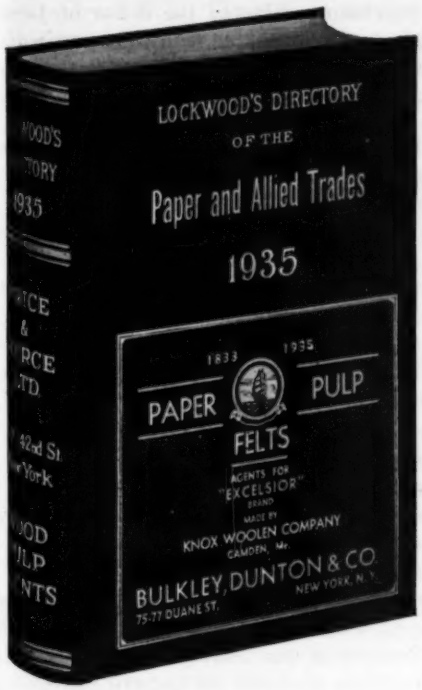
An award of 300,000 pounds (300 rolls) of supercalendered book paper on 38 pound rolls has been made equally at 4.98 cents per pound to the Perkins-Goodwin Company, Stanford Paper Company and the J. W. Butler Paper Company, bids for which were received on February 25.

Reese & Reese will furnish 36,000 pounds of rope manila paper in 18 inch rolls at 10.5 cents per pound and the R. P. Andrews Paper Company will furnish 2,715 pounds (10,000 sheets) of 50 per cent rag green laid cover paper at 13.09 cents per pound. Bids for both of these items were received on March 4.

Troy Paper Corp. Made Brown Agent

The Hudson Valley Paper Company of Albany and the Troy Paper Corporation of Troy, have been appointed agents for Greylock Linen Ledger in Albany, Troy and Schenectady, N. Y.

This paper is one of the well-known products of the L. L. Brown Paper Company, Adams, Mass.



LOCKWOOD'S DIRECTORY

of the

PAPER and ALLIED TRADES

1935 EDITION

If you are interested in the

PRODUCTION

SALE or

DISTRIBUTION

of

PAPER

PULP

EQUIPMENT

SUPPLIES

RAW MATERIALS

You must keep up-to-date with this Directory—

Pin check or money order to coupon now — Mail to⟶

CONTENTS

City Address of Mills and Mill Supply Houses
Classified List of Paper Mill Products, Canada
Classified List of Paper Mill Products, United States
Classified List of Pulp Mill Products, Canada
Classified List of Pulp Mill Products, United States
Coated Paper Manufacturers
Envelope Manufacturers
Glazed and Coated Paper Manufacturers
Idle Mills
Index to Mills
Machinery and Equipment Manufacturers
Mill Officials
Pad Manufacturers
Paper Merchants, Canada
Paper Merchants, United States
Paper Stock and Rag Dealers
Paper Bag Manufacturers
Paper Box Manufacturers

CONTENTS

Paper and Pulp Mills in Canada
Paper and Pulp Mills in United States
Paper and Pulp Mills in Cuba, Mexico and South America
Paper Specialties
Papeterie Manufacturers
Prepared Roofing Paper Manufacturers
Pulp Testing Chemists
Purchasing Agents
Rags and Paper Stock Consumed by the Mills
Statistical Table of Mills
Tablet Manufacturers
Tag Manufacturers
Toilet Paper Manufacturers
Trade Associations
Twine Manufacturers in United States and Canada
Vegetable Parchment Paper Manufacturers
Wall Paper Printers
Watermarks and Brands
Waxed Paper Manufacturers
Wood Pulp Importers

LOCKWOOD TRADE JOURNAL CO., Inc.
15 West 47th Street, New York, N. Y.

Send, delivery charges prepaid, a copy of the 1935 (60th) Annual Edition of Lockwood's Directory of the Paper and Allied Trades. Price $7.50 ($7.00 cash with order).

Check which edition you want:

☐ Regular Edition. Name .....

☐ Traveler's Edition. Address .....

..... 193 .....

PAPER TRADE JOURNAL
ESTABLISHED 1872
15 West 47th St., New York, N. Y.
Henry J. Berger
Editor
Ronald G. Macdonald
Editor Technical Section
Herbert J. Laughton
Associate Editor
Thomas J. Burke, C. A.
Editor Cost Section
Lynne M. Lamm
Washington Correspondent
Price, Per Copy, 10 Cents
United States, Per Annum, $4.00
Canada, including tax, $7.50; Foreign Countries in Postal Union, $6.00
Member Audit Bureau of Circulations
Vol. C New York, March 14, 1935 No. 11
This publication is now and always has been printed on paper made in the U. S. A.

FOURTH SUCCESSIVE GAIN IS SHOWN IN MANUFACTURING ACTIVITY

The fourth successive gain in manufacturing activity, as measured by man-hours worked, was recorded in January, the increase being 9.3 per cent over the December figures, according to the monthly survey of the National Industrial Conference Board. This gain, the board announced, was a result of an increase of 4.9 per cent in the number of workers employed and an advance of 4 per cent in hours worked.

"Average hourly earnings were practically unchanged, advancing only from 59.3 cents in December to 59.4 cents in January," the board states. "Average weekly earnings, on the other hand, increased 4.4 per cent, from $20.70 in December to $21.61 in January. This increase more than offsets the small advance in the cost of living, with the result that real weekly earnings, or the actual purchasing power of weekly earnings, increased 3.3 per cent."

Average working hours per week showed a gain of 4 per cent, advancing from 35 hours in December to 36.4 hours in January. The combined effect of increased employment and longer working hours was further reflected in a 0.5 per cent gain in total payrolls, the board points out.

"Figures for January indicate a significant gain since the corresponding period last year," the report states. "During the year average hourly earnings increased 7.8 per cent; average weekly earnings, 14.4 per cent; average hours of work per week, 6.1 per cent; real weekly earnings, 8.6 per cent; total employment, 7 per cent; total man-hours, 13.7 per cent, and total payrolls, 22.4 per cent.

"The cost of living of wage-earners advanced 1 per cent from December, 1934, to January, 1935. This rise, considerably higher than the average seasonal gain, is principally due to an increase of 3.4 per cent in retail food prices. The purchasing value of the dollar in January, 1935, was 122.5 cents as compared with 100 cents in 1923."

TO REVISE PULP AND PAPER BOOKS

The Joint Textbook Committee has decided to proceed at once with the revision of the industry's textbook that was proposed in 1932, but postponed because of the uncertain conditions at that time, and because of the many developments that were then in process of adoption. In co-operation with the publishers, the McGraw-Hill Book Company, and committee will revise Volmes III, IV, and V of The Manufacture of Pulp and Paper, originally published in 1922-5, and last revised 1927-9. The editor's plan, as approved by the authors of the various sections, and the leaders of the Technical Association of the Pulp and Paper Industry and the Technical Section of the Canadian Pulp and Paper Association, is as follows: Committees are asked to review the sections of the books with which they are particularly concerned, and advise the editor of changes that should be made.

It has been suggested that the criticism of the present text should be on a broader basis in order to assist those committees. Readers of the PAPER TRADE JOURNAL are therefore requested to read over the parts of the textbooks dealing with their particular departments, with regard to the following points: (1) to indicate portions that because of obsolescence or otherwise could be omitted without serious effect on the educational or reference value of the work; (2) to indicate what portions could be condensed, and how; (3) to note points in the text where improvement in equipment or process requires rewriting to make it agree with present practice; (4) to suggest new material that should be included as a result of recent developments in equipment and operation; (5) to correct errors in the present text.

Recommendations, with information or sources of same, should be sent as soon as possible to the editor, J. N. Stephenson, at Gardenvale, Que.

There is a tremendous amount of work to be done. Volume III is nearly out of print and the revision of this Volume is being pushed as rapidly as possible. Any assistance will be welcome. There may be duplication of suggestions, but this will only emphasize their importance.

SWEDISH PAPER PRODUCTION GAINS

Swedish production and exports of paper are reported to have been generally higher in 1934 than in the preceding year, although figures covering output, except for newsprint, are not yet available. Production during the current year is expected to be maintained at the same or higher levels. There were no labor disturbances during the year and wage agreements were renewed for 1935. Prices, however, were extremely unsatisfactory, and manufacturers look forward to a gradually increasing price level during the current year. The mills operating under the "Scankraft" agreements, now in force for two years,

are reported to have increased their 1934 production about 7 per cent over 1933. The mills in northern Sweden, under this agreement, are understood to be operating at no more than 80 per cent capacity. Increased exports in 1934 of 9½ per cent compared with the preceding year, bear out the report of increased production mentioned above. At a meeting of the "Scankraft" members late in December it was decided that the restriction of output in the Swedish mills, effective January 1, 1935, until further notice, should be reduced from 15 per cent to 10 per cent. Gauging production by exports, the output of sulphite wrapping paper during the last three months of 1934 was several thousand tons ahead of that for the third quarter of the year. At the middle of November, however, advance sales were reported as far below production capacity, and this unsatisfactory condition persisted through the remainder of the year. Newsprint production during the fourth quarter declined slightly, bringing the year's output down to 239,811 metric tons as against 240,111 tons during 1933.

Art of Color and Color Dimensions

Because of the growing interest on the part of the paper industry in the study of the use requirements of paper and the problems of the printer and paper converter, it is well to call attention to two books by Faber Birren recently published by the Crimson Press of Chicago, and now available through the Book Department of the Technical Association of the Pulp and Paper Industry.

Faber Birren is one of America's foremost colorists. To all craftsmen and designers utilizing color in any medium his published works offer an original viewpoint not to be found elsewhere in color literature. These books answer color problems in a practical way, summarizing as they do the extensive research, experience and knowledge of this very capable author.

In *The Printers Art of Color* the several chapters are replete with practical ideas. Facts are given on basic color science, the language of color, the effectiveness of color in merchandising—plus simple rules of harmony and the economical use of inks for elaborate effects. It is a specialized work and is of direct value to all workers in the graphic arts.

The chapter titles will indicate the scope of the work: Using the Single Color Effectively; Using Two Colors to Get Four Color Effects; Developing the Perfect Color Scheme; Human Side of Color Appeal.

In the book *Color Dimensions* Faber Birren has included a history of color systems, basic color facts, traditional and modern color harmony, the Birren Color Equation and its use in color definition.

The Printers Art of Color at $1.50 per copy and Color Dimensions at $2 per copy may be obtained from the Technical Association of the Pulp and Paper Industry, 122 East 42nd Street, New York.

R. F. C. Loans to Paper Firms

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., March 13, 1935—During the month of January the Reconstruction Finance Corporation made loans to the following paper companies at 6 per cent interest: Package Paper Company, Holyoke, Mass., $75,000; Thames Paper Tube Company, Uncasville, Conn., $7.000; and United Paper Company, East Braintree, Mass., $17,000.

Container Corp. Makes Good Report

The annual report of the Container Corporation of America shows net profit of $1,112,711 for 1934 against net profit of $140,921 for 1933 and net loss of $1,380,363 for 1932. After provision for current preferred stock dividends, the earnings amounted to $1.58 per share on Class A Common Stock and $0.79 per share on the Class B. Common Stock. Walter P. Paepcke, president, states in the report that since the close of 1934, a dividend of $7.00 per share, amounting to $84,462 on the outstanding Preferred stock has been declared, payable on April 1, 1935. The Container head states that the preferred dividend requirements of 1934 were earned thirteen times over, and, "it should not take too long to pick up back payments, while taking care of future payments currently."

"Consideration of common dividend payments," Mr. Paepcke says, "will be in order whenever earnings and outlook justify, adequate provision for sinking funds on the substantial funded debt has been made, cash resources permit and after arrears of preferred dividends have been paid."

Container earnings are said to be the best since 1927. It is pointed out that, while increase in net profit over previous year amounts to $971,790 additional depreciation of $193,155 was taken as compared to 1933, and actual comparison of the two years indicates a betterment of $1,164,945 over 1933.

The 1934 report discloses current assets as $4,456,433 compared to $4,223,837 for 1933; cash on hand of $820,912 compared to $439,616 for 1933. Total current liabilities are shown as $1,689,458 compared to $1,327,225 for 1933. A decrease in working capital is shown of $129,637; the expenditure of $1,996,138 for improvement of buildings, machinery and equipment; acquisition during the year, of $268,000 par value bonds and debentures, and $366,421 par value preferred stock.

Earned and capital surplus was improved by $1,178,361.

A sales volume gain of $2,896,749 is shown over 1933; a volume gain of 18.8 per cent in dollars, but a decrease of 2.5 per cent in units.

The immediate outlook appears favorable, Mr. Paepcke declares, January profits proving quite fair, and earnings for March promising to be satisfactory. Profit and loss for February is said to have been adversely affected by a strike in the Philadelphia plant. Full time operations were resumed in the paper mill February 28, and box shop March 5.

Since the close of 1934 Container acquired the paper mill properties of Marion Paper Company, Marion, Ind., and of Paper Boards, Inc., Chicago, making it possible to increase volume without disturbing market conditions.

With reference to the Paperboard Code, Mr. Paepcke states—"wage scale is well in excess of that required by controlling codes—employing more men and women than at any time in history—a possible discontinuance of the Paperboard Code should not have any effect upon future price levels."

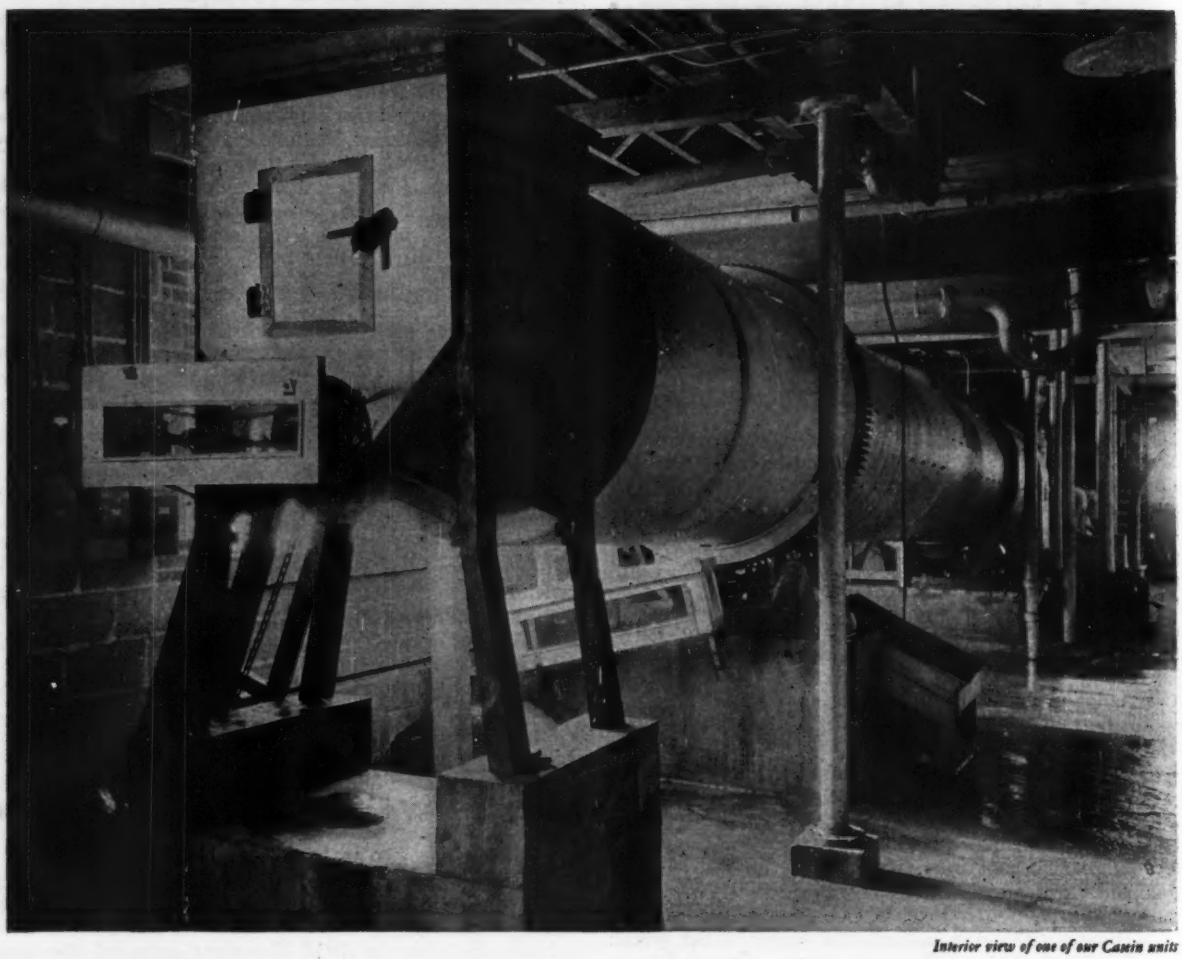
Bird & Son Joins TAPPI

Bird & Son, Inc., of East Walpole, Mass., has become a Corporate Member of the Technical Association of the Pulp and Paper Industry. This Company manufactures 225 tons daily of roofing sheathing, wrapping, press board, wall board, insulating, solid fibre, laminated board for book covers, corrugated, cartridge and special paper of many kinds.

Bird and Son, Inc., will be represented in the Technical Association by C. W. Conrad.

NO LONGER AN ART

NOW A SCIENCE



Interior view of one of our Casein units

CASEIN making was formerly an art in that the "feel" of the curd was the most important control of quality.

The application of heat and pH control, together with modern equipment, have eliminated guess work and made possible the manufacture of uniformly high quality. Speed in processing is essential in producing high quality Casein . . . with **ACCO Casein** it is a matter of minutes from milk to the Casein bagged ready for shipment.

American Cyanamid & Chemical Corporation

30 ROCKEFELLER PLAZA • NEW YORK, N. Y.

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Machinery

Shake for Fourdrinier Paper Machine Tables. J. M. Voith. Fr. pat. 765,723 (Dec. 16, 1933).—The shake is produced by excentrically mounted oscillating masses, which may be mounted directly on the rails or mounted independently on elastic parts such as springs.—A.P.-C.

Apparatus for the Manufacture of Pulp. Carl B. Thorne. U. S. pat. 1,975,301 (Oct 2, 1934).—The end of the pipe through which the cook is blown from the digester into the blow pit is provided with a cooling chamber by means of which the temperature of the charge is reduced to a point where no flashing into steam takes place while at the same time it is kept sufficiently high to prevent any appreciable solution of free sulphur dioxide gas in the liquor.—A.P.-C.

Centrifugal Pulp Purifier. Georges Grauss. U. S. pat. 1,975,319 (Oct. 2, 1934).—The basket of a centrifugal pulp purifying machine is divided by a loading body turning with the basket and having a tubular form, into two centrifuging chambers, which communicate near the bottom of the drum. The stock is introduced in the internal chamber and moves from the bottom to the top in this chamber where it is dispersed and subjected to a disintegrating action. It then passes through the lower opening of the feed tube, into the external chamber where the material which has been centrifuged rises while the light and heavy impurities are separated.—A.P.-C.

Pulp Screening Machine. Anton J. Haug. U. S. pat. 1,974,651 (Sept. 25, 1934).—A horizontal cylindrical screening drum is mounted in a casing into which stock is fed so that the entire outer surface of the screen is maintained constantly submerged in unscreened stock while approximately the lower half of the inner surface is constantly submerged in screened pulp. A series of arms, substantially parallel and close to the outside of the screening surface are mounted to rotate at a sufficient speed to carry with them a considerable volume of the unscreened pulp without setting up a high centrifugal force. Mounted on the inside of the casing are deflector bars extending substantially parallel to the axis of the screening drum. Either the casing or the screening drum may be rotated slowly.—A.P.-C.

Apparatus for Purifying Pulp Stock. Sven C. Lindberg assignor to Centrifugal Engineering and Patents Corp. U. S. pat. 1,974,679 (Sept. 25, 1934).—In a centrifugal pulp purifier having a rotatable drum with interior annular ribs of increasing diameters, apertures are provided in the walls to permit of the escape of stock centrifugally from each of the pools that are formed between successive ribs. Each aperture is provided with a closure means operable both by gravitational force and by centrifugal force to close the aperture, and also with manually operable means for opening them either when the drum is rotating or when it is at rest.—A.P.-C.

Screening and Refining of Pulp. William H. Mason assignor to Masonite Corp. U. S. pat. 1,970,330 (Aug. 14, 1934).—The invention provides a combined refining and screening apparatus for "gun fiber," comprising a casing in which are co-acting series of refiner rings, one of the series being rotated and the other stationary. The relative position of the two sets of rings is adjustable so as to regulate the clearance between them, and consequently the size of the refined pulp.—A.P.-C.

Production of Sheets of Uniform Formation. J. M. Voith Co. Fr. pat 768,222 (Feb. 6, 1934).—In order to obtain uniform distribution of the fibers in all directions so that the strength of the paper shall be substantially equal in the machine and cross directions, the stock is delivered so that it is vigorously agitated at the moment when it reaches the wire. This may be obtained by delivering the stock to the wire in a relatively thin sheet directed diagonally downwards, *e.g.*, at an angle of 40°. The apron may be dispensed with, the stock being delivered directly on to the breast roll.—A.P.-C.

Improvements in the Construction of Paper Machine Tables and Shaking Devices. Bernard Bonjean. Papier 37:711-739 (Aug., 1934).—An address describing the development of paper machine tables and shake mechanisms to their present state of perfection.—A.P.-C.

Fourdrinier Wire Factors. Harry G. Specht. Paper Trade J. 99, No. 10:34-37 (Sept. 6, 1934).—A discussion of the principal factors affecting the life of fourdrinier wires.—A.P.-C.

Kollergang Beating Method for Pulp Evaluation*

James d'A. Clark[1]

Abstract

An apparatus and method for beating, with a marked degree of precision, all the usual kinds of papermaking pulps has been developed and is offered as a standard method. It is designed to be used in conjunction with the round sheet making equipment which is standard in Great Britain and Canada and the tentative standard in the U. S. A.

It is suggested that a single precision method for pulp testing purposes should be adopted for pulp specifications and purchases to be supplementary to the many individual pulp testing methods in use. Such methods, when especially adapted to the type of paper made and the specific mill equipment available for the purpose, cannot well be displaced; but as a rule they fail to have more than a limited application and their precision is usually open to question on one or both of two grounds—(a) Standardization and maintenance of the effective working edges in the apparatus and (b) Positive treatment of the pulp. The method and apparatus described are sufficiently precise to be used not only for standard pulp testing purposes but also as an empirical quantitative measure of beating action which has broad applications in the examination of new or old beating equipment.

The apparatus consists of an annular V shaped trough in which three runners, having a fixed weight of 80 kilograms, are caused to rotate positively; the working edges not being subject to change. Propellers between the runners keep the stock well separated during treatment. The apparatus holds up to 150 grams of pulp and will handle most pulps up to a consistency of 5 per cent.

The suggested method is given in formal detail for obtaining enough points to construct beating curves of the various physical properties of pulps, including the drainage time. The calibration of the apparatus is described, and the precision of the method is approximately the same as that of sheet making and testing alone.

The results of varying the weight, temperature and speed of rotation of the rolls and propellers and other factors are discussed, also the accuracy of repetition over a long time and with different operators. The action of the apparatus is shown to be positive. Beating results are given for a number of different pulps including strong rag and rope. These show possibilities of satisfactory specifications for pulps to suit individual mill requirements.

The TAPPI tentative standard apparatus and methods for sheet forming and testing, (T205m), were evolved early in 1929 and since have become the official British and Canadian Associations' standard methods. The equipment has enjoyed world wide distribution, there being a total of over sixty sets in use in almost all paper making countries. While it has been generally agreed that both the methods and the equipment have proved sound and satisfactory for a precision method of forming and testing sheets from pulp, both for the initial strength and after beating to any degree of wetness, it was clearly recognized that there was lacking an exact corresponding method for treating the pulp prior to forming the sheets. The present method tentatively offers a solution.

Recent Laboratory Beating Equipment

The literature contains descriptions of a number of methods suited to new and old equipment for laboratory beating, notably in recent years, the Niagara and Valley beaters (TAPPI Standard T200m), the Lampen mill by Harrison (*1*), and the very thorough treatise on both the Lampen mill and beater by Bergman (*2*). The Abbe pebble mill has been the subject of a series of studies by the New York State College of Forestry in Syracuse for the last few years and a number of interesting papers on the subject have been presented (*3*); also recent papers on the same subject by Morgan (*4*) and Simmonds and Baird (*5*).

A more recent apparatus is the Jokro mill, developed in Darmstadt by Jonas and Kross, which has been adopted as the tentative standard beating apparatus by the German Association (*6*). Recent experimental work has however, thrown grave doubts as to its constancy and reliability, as the knurling of the interior on the containers, and the sharp edges of the beater rolls wear appreciably and alter the action. Cottrall and Gartshore (*7*) have designed and described a very useful and excellent laboratory beater, which deals with stock as high as 6 or 7 per cent consistency and gives a very close correlation with the beating equipment in their mill. There is also the Voith beater of Jonas and Schlechter (*8*) which will handle similar stock but requires a larger sample. Both beaters have fly bars and circular bedplates and vary the intensity of beating by changing the fixed distance between them.

Definition of Precision Beating Apparatus

A precision beating apparatus may be defined as one which progressively bruises the fibres in a mixture of pulp and water in a positive, definite and reproducible manner.

This involves two main conditions: First, the pulp must be passed uniformly and positively through the bruising mechanism, the action of which upon the fibers must be positive and not dependent upon the friction of the pulp. This requirement rules out rod mills or ball mills for the purpose, as, particularly with a single ball mill such as the Lampen mill and to a lesser degree with pebble and rod mills, the amount and nature of the bruising action (a combination of rubbing and rolling) is dependent upon the slipperiness of the pulp. A harsh pulp may sometimes be made slippery by the addition of a small amount of alkali or other material and so be differently acted upon by apparatus of the type mentioned. The slipperiness of stock in a paper mill is modified by the addition of size, alum and loading material, so it is clear that this factor should not influence a laboratory test.

Second, cutting edges must be avoided. It is impossible to standardize a cutting edge subjected to progressive dulling in use. The cutting action on a pulp is an at-

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., Feb. 18 to 21, 1935.
[1] Member TAPPI, Technical Director, Scott Paper Company, Chester, Pa.

tribute of the beating apparatus itself and not of the pulp, and provided the cutting edges are sharp enough, the fibers of any pulp whatsoever would be cut in the same way, irrespective of quality. Consequently any type of laboratory beater or refiner employing cutting bars, is unsuitable for reproducible precision test work. Moreover, especially with low consistencies, the uniformity of the cutting effect tends to minimize differences in qualities of pulps when the resulting test sheets are examined.

Development of the Kollergang

The kollergang as described is the outcome of a series of experiments and alterations carried out on three successive models of the same type. In the first model difficulties were experienced with irregular operation, caused by the runners carrying up pulp and depositing it outside the tub. Several different designs of doctors were tried but without success as they soon became clogged with stock. To overcome this the outer side of the trough was flared out to be sufficiently wide to catch any particles of stock dropping from the rolls, and a single self-cleaning scraper effectively returned them to the main body of stock. Without propellers some stocks soon riced up and became lumpy. Propellers were tried and found to be very effective in keeping the stock smooth and the action uniform. The weight of the rollers and the width of the working edges was varied and finally a compromise design was adopted so that the apparatus became suitable for beating both the weakest and the strongest pulps. The action on weak bleached sulphites is satisfactory, while a strong sulphite pulp may be reduced to a greaseproof stock in less than two hours. This compares very favorably as regards speed with usual laboratory equipment for the purpose.

Positive Action of Equipment

Probably the most satisfactory feature of the equipment is its ability to duplicate its action on pulp irrespective of the quantity in the tub, within certain wide limits, provided the consistency and the number of revolutions per gram of pulp treated are constant. This serves as a proof of the positive action of the instrument and allows many short cuts to be taken in the procedure for routine testing purposes.

The construction of the apparatus is relatively simple and every vital part may be rigorously standardized. The rims of the runners, being removable, may be replaced when worn down; but a set should give service for well over a year in constant use. There is also assurance that results with new rims will be substantially the same as those with the old ones, as they wear down perfectly flat and the working surfaces are not altered during use—a very important point.

The effective weight of the rollers is adjusted to standard and the speed may be easily controlled to be within a range where results are not affected. Using a time switch, the apparatus may be set to stop automatically after any desired period. By virtue of the constancy of the effect of the number of revolutions per gram on the pulp irrespective of the quantity of stock in the trough, any error inadvertently made in time of treatment or the amount of pulp extracted, may be corrected by plotting the various results against the actual number of revolutions per gram and by interpolation, obtain test results at any desired points.

Other Advantages as Standard Equipment

The apparatus is different from most, in that it is open and any unusual occurrence is easily seen and corrected; this helps to give assurance as to reliability. Samples are removed without difficulty and the tub is easily cleaned by opening the drain valve, and, with a stick, pushing a cloth around the tub behind one of the runners. Stock having a consistency of over 5 per cent. may be treated, but a consistency of 3 per cent. is specified in the suggested method, as the curve relating speed of beating to consistency of the stock in the kollergang, reaches a maximum and is fairly flat between 2½ and 4 per cent. This is caused by the de-watering action of the groove in the rims of the runners, which tends to make the pulp actually treated have a constant consistency, irrespective, within wide limits, of the consistency of the stock in the tub. With free, long fibred stocks such as strong rags or rope, even with stock in the tub at 1½ per cent. consistency, the de-watering action of the groove considerably thickens the pulp passing under the runners.

The fact that the same equipment and same method can be used satisfactorily for treating all the usual paper making pulps, without recourse to special conditions for different varieties, (except for reducing the consistency of long incompletely defibered rag and rope half-stuff) would seem to make it especially suitable for standard or reference purposes, and with its rapidity, ease of operation and simplicity, it is at the same time admirably suited to routine control work. With the standard sheet making method and equipment for which the apparatus is particularly adapted, complete beating curves for a pulp can be drawn well within three hours, exclusive of the time necessary for soaking a dry pulp prior to disintegration. At the same time in addition to the usual results, the rate of increase of slowness and rate of beating are precisely and simply determined, without the use of a separate freeness tester.

The accuracy of the method is such that variations expected between results obtained with duplicate runs are not appreciably greater than for sheet making and testing alone.

Necessity for Individual Methods

For investigational work in a given mill, a different type of apparatus than the kollergang might give results more comparable with practice. In the same way, it would be unwise to confine research work on pulps in a mill making, say, thin facial tissues, to the TAPPI Standard T205m, which calls for a 60 gram per square meter (42.7 pound 25 x 40-500) uncreped sheet. If in any mill, jordans were used entirely in place of beaters, it would seem desirable for experimental purposes to obtain a small jordan as laboratory equipment. It is clearly an individual problem for each mill laboratory to be equipped with the most suitable apparatus and to evolve the most suitable method which gives results comparable with its own mill practice, taking into account among other things, the type of beaters used, the tackle, the procedure, the white water system, the paper making machine, and essentially the substance and type of paper made. Obviously, this calls for at least as many different methods as there are paper mills, and largely accounts for the confusion that exists in pulp testing practice at present.

Case for a Standard Method

For the sake of standardization of pulp quality and the purchasing of pulps, it is essential that each of these various methods should be related to a common method which is accurate, reproducible and comprehensible, so that the suppliers of pulp will not be faced with the necessity of testing their pulps in as many ways as they have customers. It appears possible, after a careful study and investigation

of mill conditions and the effects of the beating and accessory equipment, to determine approximately the equivalent number of revolutions per gram which is accorded stock for a given class of paper and to interpret the beating curves (as shown in Figs. 5, 6, 7, 8 and 9) accordingly. Usually this is best done by considering the reduction of freeness or the increase of the drainage time or factor. For example, in a news mill the beating conditions might prove to be about 5 revolutions per gram, a book paper mill 7, a mill making bond paper 10, a ledger 20, or a glassine 80, and so on. Knowing the appropriate number of revolutions per gram required for a given set of conditions for a given paper, it becomes a relatively easy matter to choose the most suitable pulp or pulps when their standard beating curves are available.

It cannot be urged too strongly that in every large mill two methods should be used, one their own for their own purposes and the other a standard one for pulp purchasing, the two methods being related either by suitable conversion factors, or by the knowledge of the significance of standard test results on their own process. For smaller mills not able to afford two methods, it is recommended that they use only one method, their own, and obtain from some suitable source, such as another mill or laboratory, for example, by arrangement, through the Institute of Paper Chemistry, information to enable them to translate their findings into standard values.

This principle, if generally accepted, would prevent continued discussion as to which private method should become the standard, which in effect is the position today, and leave the mills free to use or develop their own methods and apparatus in the way it suits them best.

Unit of Beating Action

It will be noticed that by providing a definite unit of measurement for beating action—revolutions per gram of pulp—it now becomes possible to evaluate properly the efficiency of beating equipment; for example in terms of kilowatt hours per ton, per revolution per gram, for the power consumption, and revolutions per gram, per ton, per hour, for rapidity of action. This may be done either for the development of slowness of the stock or for the development of strength and provides a ready means of obtaining additional information for comparing the merits of new or old beating systems in paper mills.

Comparison of Mill and Laboratory Beating Equipment

It does not appear to be generally recognized that the underlying difference between mill and laboratory beating equipment is not that of consistency or speed or weight, but that of uniformity of action. A laboratory instrument being small and compact, should and does treat the relatively small quantity of stock it holds very uniformly. Almost each fiber receives its quota of treatment, whereas in mill equipment only a relatively small percentage of the fibers in a beater or jordan are affected, the remainder being practically untouched.

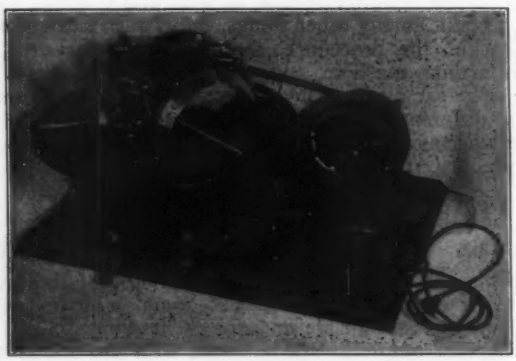


FIG. 1
General view of Clark Kollergang.

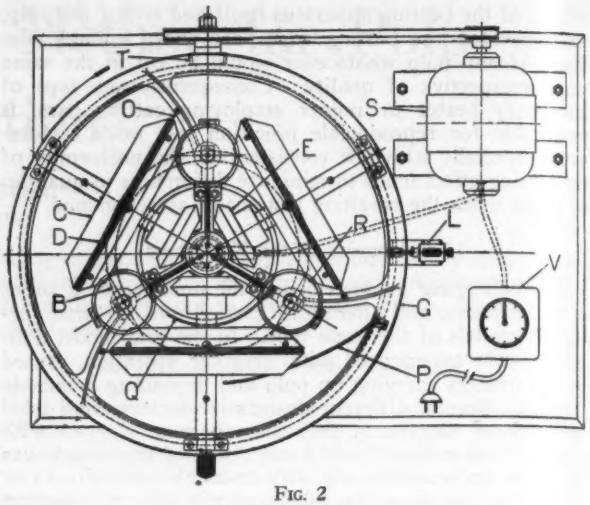


FIG. 2
Plan of Kollergang.

Consequently, by mixing a quantity of unbeaten pulp with some which has been beaten in the laboratory, the characteristics of mill beaten stock should be realized; and this indeed is the case. For example, by adding suitable quantities of unbeaten pulp to laboratory beaten stock, the substantial increase in tear, as realized during the first stages of beating in the mill, may be duplicated perfectly. This is a very important point and should serve to clarify any doubts as to the value of good laboratory equipment for pulp testing purposes. This also may explain the apparent superiority of results of the kollergang over pebble and rod mills and laboratory beaters, because in the kollergang the beating action is confined to three short line contacts whereas in the other apparatus, such as the laboratory beater, the ratio of inch cuts per minute, to the grams of stock being treated, is relatively larger and so its heterogeneity of action is not as comparable with mill equipment as the kollergang.

With the foregoing taken into consideration, it may be said that the action of the kollergang on pulp is similar to the action of an average beater put to average use in an average paper mill on average stock; a magnificently indefinite statement which can neither be successfully attacked by theoretical considerations, nor indeed successfully defended, except perhaps by the presentation of successful practical results.

METHOD

Scope

This equipment and procedure deals with a precision method of processing pulp prior to forming test sheets, so as to determine its behavior and quality when subjected to a definite amount or amounts of beating.

The method embraces only the furnishing and operation of a laboratory kollergang and the withdrawal of samples. The forming and testing of sheets from pulp so prepared are assumed to be in accordance with the Tentative T.A.P.P.I. or British and Canadian Association's Standard Procedure for that purpose (T.A.P.P.I. Standard T205 m).

Apparatus

(a) STANDARD DISINTEGRATOR: For specification see T.A.P.P.I. Standard T205 m.

Note: Unless very precise results are required at the initial stages of beating, any apparatus suitable for disintegrating 66 grams of pulp at 3 per cent consistency may be used.

(b) STANDARD KOLLERGANG:

The general appearance is shown in Fig. 1; Figs. 2 and 3 being a plan and section respectively. It consists of an annular V-shaped tub A, made of cast iron and chromium plated, with a circular hard stainless steel track B, 12 mm. wide and 11 inches diameter, inserted in the bottom, upon which the three runners C rotate. These rolls are 2 inches thick and also of chromium plated cast iron. They are 11 inches diameter with their circumferences bevelled to 45 degrees. Phosphor bronze rims D carry the working edges, as shown in Fig. 4, which are 9 mm. wide, with a groove in the center 3.0 mm. wide and about 3.0 mm. deep. The rims are inserted around the runners and are fastened with countersunk screws. The outsides of the edges are normally 1 mm. deep and it will be seen that all the edges being vertical, even after wear, the only dimensions affecting the action of the runners (the width of the edges) will be constantly maintained.

The three runners have bronze bushings connected through bevel gears E, to a stationary bevel gear F, the bushings rotating on steel shafts N. The gears and dimensions are so arranged that a pure rolling motion of the center of the edge of the runners is achieved without slip. The frame G carrying the runners and propeller system, rotates about the vertical stub shaft H carried in the center bushing. The frame is free to move vertically so that the weight of all the rotating elements is carried by the runners. This amount is adjusted to exactly 80 kg. by means of the weight W, so that a pressure of 26.6 kg. is applied to each working point.

The propellers J are driven by means of individual motors R. The propellers are 1 inch in diameter and shaped as shown in Fig. 3 with their bottom surface 7/16 inches above and central to the steel track and rotate between 6000 and 8000 r.p.m.

The rotating parts are driven between 30 and 40 r.p.m. by means of a suitable belt and gear drive T and ½ h.p. motor S.

A counter L (Fig. 2) which can be reset to zero, is actuated at every complete revolution of the runners.

A wash-out plug for the trough is shown at M.

A time switch V controls the motors and is preferably calibrated in number of revolutions of the kollergang. It is used to stop all the motors when any desired number of revolutions have been completed.

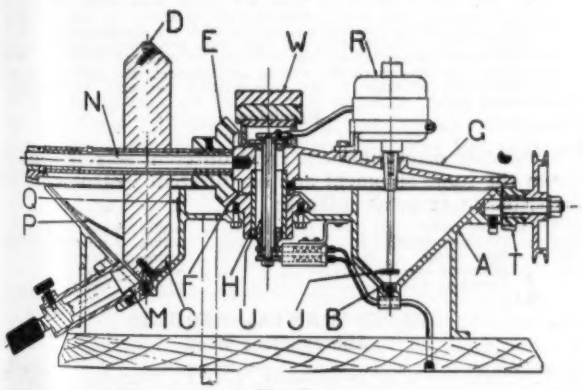


FIG. 3
Section through Kollergang.

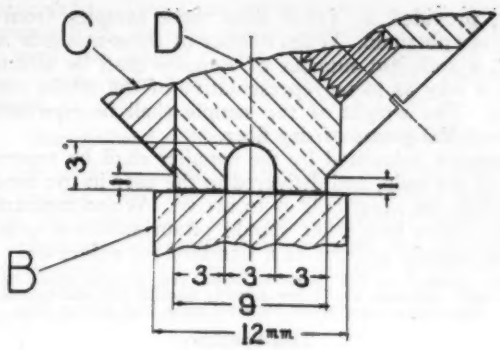


FIG. 4
Section of rim.

A doctor O made of 3/32 inch brass wire is carried on each arm of the spider. Each doctor is 3 inches long and works in the groove of each runner to prevent plugging of the grooves. A single brass doctor P of 3/16 x 3/32 inch brass, 9 inches long is carried by the rim of the spider and sweeps any stock on the outer side of the tub back into the trough. A similar doctor Q works on the vertical side of the trough. The doctors O, P and Q are self-cleaning and effectively keep the apparatus clean and all the stock in the trough.

Note: The laboratory kollergang in the U. S. A. is made by the Hermann Mfg. Company, Lancaster, Ohio.

(c) STANDARD SCRAPER AND GAUGE.

(d) STOCK SAMPLER—Spoon with handle suitably bent, or a small gravy ladle.

(e) GRADUATED CYLINDER—1000 cc.

(f) BALANCE—Weighing up to 500 grams with a sensitivity of 0.2 g.

Calibration

Lift the framework, including the runners and small motors out of the tub and weigh. The total weight shall be adjusted to 80 ± 0.5 kg. (176 ± 1 pound).

From time to time the width of the rims on the runners shall be checked and corrected if necessary with the special scraper gauge provided, as adventitious hard foreign substances are occasionally introduced with the pulp and may bruise the faces of the runners. The scraper gauge in turn shall be checked and set to the piece of standard runner section provided with the equipment, the dimensions of which are shown in Fig. 4, or with a 3 mm. wide feeler gauge. At the same time the faces of the runners shall be smoothed if necessary, with a steel scraper having a perfectly straight edge.

When the depth of the vertical edges of the runners becomes 0.2 mm. or less, the rims shall be replaced. Normally, the rims should give about two years' service before requiring replacement.

The speed of the disintegrator motors shall be about 7,000 (between 6,000 and 8,000) r.p.m. The height of the bottom of the propellors above the track shall be about 12 mm. (7/16 inch).

The framework of the kollergang shall rotate at about 35, (between 30 and 40) r.p.m.

Sampling

When dealing with mill consignments, a sample of pulp about four square inches in area shall be drawn from the interior of every bale included in the official test for moisture, or, in the case of a shipment of chemical pulp where the cook numbers are known, the number of samples shall be proportional to the number of bales representing each

cook, provided no fewer than three samples from each cook are obtained. When neither of these methods is possible, a sufficient number of samples shall be selected in such a way as to be representative of the whole consignment. The weight of the sample shall be equivalent to at least 150 grams of dry fiber.

Samples submitted by the supplier shall be representative of the pulp, and delivered to the user in the condition in which the main bulk is to arrive. When contracts are made, buyer and seller should retain sufficient quantities of the sample to serve as a standard for reference.

Note: Storage of Pulp Samples. Moist pulp samples should be stored in air-tight containers with a few drops of formaldehyde and kept in a cool place. Dry pulp samples should be stored away from heat or light.

Test Specimen

Weigh out to the nearest 0.5 g., 66 grams (oven dry weight) of a representative sample of the pulp obtained by tearing approximately equal portions from all the samples collected, thoroughly soak with cold water if not already moist, tear into pieces about one inch square, and if dry, allow to soak in water for four hours. Moist pulps may be disintegrated immediately.

Note: As far as is known, soaking a pulp for a longer time, for example overnight, does not appreciably affect the rseults.

Procedure

AMOUNTS OF BEATING:

The standard amounts of beating for pulps shall be 0, 2.5, 5, 10, 20, 40, 80 and 120 or 160 revolutions in the kollergang per gram of pulp treated. While for some purposes it is sufficient to test the qualities of a pulp after a single amount of beating (20 revolutions per gram is suggested), it is recommended that tests be made of at least three, and preferably four, amounts of beating according to one of the following series:

(1) For pulps easily beaten.....	0	2½	5	10	20	Rpg.
(2) For normal pulps.....	0	5	10	20	40	Rpg.
(3) For pulps difficult to beat.....	0	10	20	40	80	Rpg.
(4) For pulps very difficult to beat..	0	20	40	80	120	Rpg.

Easily beaten pulps (Series 1) include, for example, soda pulp, most bleached sulphites and some easy bleaching sulphites. Normal pulps (Series 2) include strong bleached and normal unbleached sulphites and bleached sulphates. Series 3 includes strong unbleached sulphites and sulphates, while Series 4 includes kraft, very strong sulphites and strong rope half-stuffs. The series are chosen so that the tensile strength attains about its maximum value between the last two periods.

DINTEGRATION:

Make up the 66 gram sample to 2200 cc. (3 per cent.) and disintegrate for 75,000 revolutions in the standard disintegrator, but with the propeller clamped so that its lower edge is 2¼ inches from the base of the container (i.e., 1¼ inches higher than usual). After disintegration, measure out 200 cc. for the unbeaten test and empty the remainder of the stock into the trough of the kollergang.

Note: For very long incompletely defibered pulps, such as strong rag half-stuff, which ropes round the propeller, it is necessary to unwind the ropes from time to time during disintegration and snip them into ¼ inch lengths with a small sharp pair of tin snips. When the pulp is added to the kollergang it should be diluted to 1.5 per cent consistency. Because of the construction of the rims of the runners, the reduction in consistency from 3 per cent to 1.5 per cent will not materially affect the results for pulps of this class, particularly for the first few beating amounts. Weak rag or rope stocks may be treated at 3 per cent without difficulty.

PROCESSING:

Set the counter at zero and start the runners and propellers.

Commencing with 60 grams of pulp and allowing for 6 grams to be extracted after each beating period, the cumulative revolutions on the counter will be as follows:

Series 1,	2½	5	10	20 revs./g.	150	285	525	945 revs.
Series 2,	5	10	20	40 revs./g.	300	570	1050	1890 revs.
Series 3,	10	20	40	80 revs./g.	600	1140	2100	3780 revs.
Series 4,	20	40	80	120 revs./g.	1200	2280	4200	5880 revs.

If the kollergang revolves at about 34 r.p.m. the intervals between sampling under the same conditions are approximately as follows:

Series 1.....	4.5	4	7	13 minutes
Series 2.....	9	8	14	25 minutes
Series 3.....	18	16	29	50 minutes
Series 4.....	36	32	58	50 minutes

Note: The dial on the time switch should be calibrated, preferably in revolutions of the kollergang, so that the switch can readily be set to stop the apparatus after any desired number of revolutions have been completed.

When each stage has been reached, stop the apparatus. Using the sampling spoon, withdraw 200 cc. (6 grams dry weight) of the stock, taking about a third from between each of the runners.

Note: In this operation care should be taken not to disturb the consistency of the stock, so it is recommended that the pulp be removed in portions by slipping the spoon sideways into the stock and withdrawing it not quite full, no attempt being made to stir the stock, or the water and pulp will separate. Furthermore, with the stock in the initial stages of beating, rather more than 200 cc. will have to be withdrawn, especially with long fibered pulps, to give 6 grams of dry fiber, as it is impossible to prevent some separation of the water and stock. Until experience is gained, therefore, it is advisable to withdraw about 250 cc. and of that to take 30 or 40 cc., make up a single sheet separately, dry in the oven or on a hot plate and weigh, so as to ensure the test sheets being within the required weight limits, (57 to 63 grams per square meter) and make the necessary calculations to ensure the correct number of revolutions for subsequent results in the test.

After sampling, if by chance there should be any stock adhering to the sides of the runners or elsewhere, return it to the trough before commencing the next beating period.

CLEARING:

Dilute each 200 cc. sample of stock to 1 liter and disintegrate for 30,000 revolutions (10 minutes) in the standard disintegrator with the propeller in the normal position (1 inch from the bottom of the container).

DILUTION:

After clearing, dilute the stock to 4 liters (0.15 per cent. consistency) and make into 5 sheets weighing from 1.14 to 1.26 grams each (60 grams per square meter, with a tolerance of 5 per cent.), dry, test, and calculate the results, all according to T.A.P.P.I. Standard T205 m.

Report

The test results shall be reported according to T.A.P.P.I. Standard T205 m.

It is recommended that the report includes at least the following information for each beating period chosen, including the unbeaten test results: Basis weight (grams per square meter); apparent specific gravity; breaking length (in meters); tear factor (grams x 100 per grams per square meter); drainage time in secs. (corrected to 20 deg. c. and 60 grams per square meter); and a note of any deviations from the method prescribed. For many pulps the number of folds also should be reported.

Note: The results determined from test sheets made from the 200 cc. sample of unbeaten pulp in this method shall be known as the "unbeaten" test results and reported only in conjunction with the results for the beating test. The "initial" strength tests are those from test sheets made from pulp which has been disintegrated strictly according to Standard T205 m. While usually these two sets of results will be approximately the same, with some pulps particularly sensitive to the disintegration treatment, the agreement may be only fair.

Precision

Duplicate determinations from different sets of samples from the same shipment and on different instruments are expected to agree as follows:

Burst factor	within 5 per cent
Breaking length	within 7 per cent
Tear factor	within 10 per cent
Apparent specific gravity	within 5 per cent
Drainage time	within 7 per cent

EXPERIMENTAL RESULTS

Abbreviations Used

D.T. Drainage time in seconds, TAPPI Standard T205 m
B.F. Burst factor, g/cm²/g/m². TAPPI Standard T205 m
B.L. Breaking length, meters, TAPPI Standard T205 m

T.F. Tear factor, g/single sheet x 100 /g/m², TAPPI Standard T205 m

S.G. Apparent specific gravity, (Water = 1), TAPPI Standard T205 m

Rpg. Revolutions of the kollergang per gram of pulp in its trough during treatment.

Note: It is regretted that a folding tester was not available for this work.

Experiment A—Effect of Weight of Rolls on Beating

Prior to cutting the single grooves in the rim of the rolls, the effect of adjusting the weight of the rolls was tried by substituting solid cast iron rolls for the brass shell rolls on the original model. The cast iron assembly weighed about 200 pounds, 50 pounds heavier than formerly.

Thirty grams of disintegrated unbleached sulphite pulp were made up to 2 liters (1.5 per cent. consistency) and run for 1 and 2 hours with the following results:

TABLE I (See Note)

	Light Rolls			Heavy Rolls		
Rpg.	D.T.	B.F.	T.F.	D.T.	B.F.	T.F.
66.6	6.5	37	60	6.6	35	62
132	13.0	42	45	23.0	40	40

Note: Original apparatus without disintegrators used.

From this it was concluded that the heavier rolls were satisfactory, the development of wetness was speeded up and the tearing strength was not much affected.

In order to investigate the effect of the weight of the rolls further, a 20 kg. weight was placed on the top of the second apparatus, which weighed 90 kg., and using the standard procedure, the following results were obtained with unbleached sulphite pulp Z:

TABLE II

Rpg.	Weight	S.G.	B.F.	B.L.	T.F.	D.T.
10	90 kg.	0.69	35	6150	109	4.6
10	110 kg.	.69	33	5650	112	4.6
20	90 kg.	.73	41	6800	95	5.5
20	110 kg.	.74	35	6030	93	5.5
40	90 kg.	.79	40	6880	76	8.5
40	110 kg.	.78	36	6380	78	9.3
80	90 kg.	.88	42	7300	60	33.0
80	110 kg.	.87	36	6790	59	39.0

From the above it will be noticed that the effect of increasing the load on the runners by 22.2 per cent is not marked on the type of pulp tested, but the strength results with the heavier weight are lower and the drainage time higher.

It is quite clear from both these experiments that higher strength results are obtained by reducing the weight of the runners but the rate of increase of slowness is retarded. Accordingly in the final model the total weight was standardized at 80 kg.

Experiment B—Effect of Grooving the Rolls on Beating

It was anticipated that by grooving the rims of the original model which had solid rims 10 mm. wide, the rate of beating would be accelerated. Two different quantities, 48 and 60 grams, of unbleached sulphite pulp, were made up to 2 liters (2.4 and 3 per cent consistency) and milled for 4000 revolutions, then tested for drainage time and burst factor.

TABLE III (See Note)

	Rolls Plain			Rolls Grooved		
Grams Pulp	Rpg.	D.T.	B.F.	Rpg.	D.T.	B.F.
48	83.5	15	40	100	64	30
60	66.6	9	52	80	55	48

Note: Original apparatus without disintegrators used.

Both sets of sheets made from the grooved rolls were greaseproof and it is clear that while the revolutions per gram were not comparable (owing to a mishap), beating proceeded very much more rapidly with the grooved than the smooth action became disturbed with the formation of the plain rolls. Two 3 mm. grooves in a 12 mm. wide rim were then tried, but the results appeared to be no better than with the single groove. Accordingly, the single groove 3 mm. wide in a 9 mm. wide rim was adopted as standard.

Experiment C—Effect of Agitators on Beating

In the original model no propellers were used and the stock quickly riced up and the action of the rolls was uneven. By providing a high speed propeller before each roll, lumps are prevented from forming and the beating action proceeds more quickly. Fifty-five grams of unbleached sulphite pulp Z were milled at 2.5 per cent consistency with and without the propellers working.

TABLE IV

	Rpg.	B.F.	T.F.
With Propellers running	10	35	103
	20	41	87
	40	44	73
Propellers stopped	10	30	115
	20	32	99
	40	35	80

Clearly the propellers are of great assistance in promoting the beating action.

Experiment D—Effect of Speed of Propellers on Beating

To determine the effect of variations in the speed of the propellers, 55 gm. unbleached sulphite pulp Z were milled at 2.5 per cent with the propellers revolving at different speeds.

TABLE V

Propellers	Rpg.	B.F.	T.F.
6300 R.P.M.	10	35	100
	20	41	86
	40	44	71
7500 R.P.M.	10	35	104
	20	40	87
	40	43	72
9300 R.P.M.	10	36	101
	20	41	89
	40	44	78

The values for the three series are almost identical so it is evident that over a wide range the speed of the propellers is unimportant.

Experiment E—Effect of Speed of Rotation on Beating

Fifty-five grams of pulp Z were milled with the kollergang rotating at 29, 33.5 and 40 r.p.m

TABLE VI

Speed	Rpg.	B.F.	T.F.	S.G.
29 R.P.M.	10	35	112	.72
	20	39	90	.74
	40	40	80	.80
	90	43	55	.89
33.5 R.P.M.	10	35	104	.70
	20	40	90	.75
	40	43	87	.81
	90	45	57	.89
40 R.P.M.	10	34	110	.68
	20	39	93	.72
	40	42	81	.80
	90	43	62	.88

No significant differences in the beating action were apparent over the range of speeds tested.

Experiment F—Effect of Consistency on Beating

It was found that the kollergang would handle wood pulp up to about 6 per cent consistency; however, over 4 per cent the smooth action became disturbed with temporary

TABLE VII

Consistency	Rpg.	S.G.	B.F.	B.L.	T.F.	D.T.
1.5	5	.65	30	5000	123	4.2
	10	.66	35	5900	114	4.4
	20	.70	41	7100	91	5.1
	40	.74	43	7350	72	5.9
3.0	5	.65	38	6500	98	4.4
	10	.70	45	7080	93	5.0
	20	.73	47	7760	82	6.0
	40	.79	49	7660	72	9.8
4.0	5	.66	35	5800	99	4.2
	10	.71	46	6980	89	4.8
	20	.77	49	7550	74	6.3
	40	.79	48	7800	70	10.0

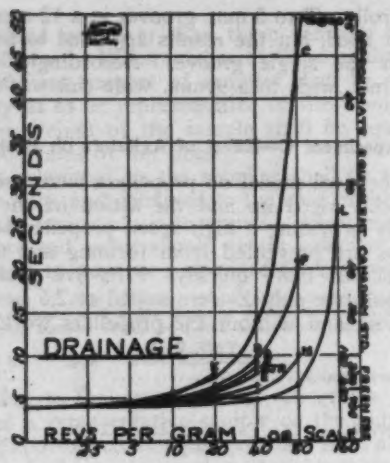


FIG. 5

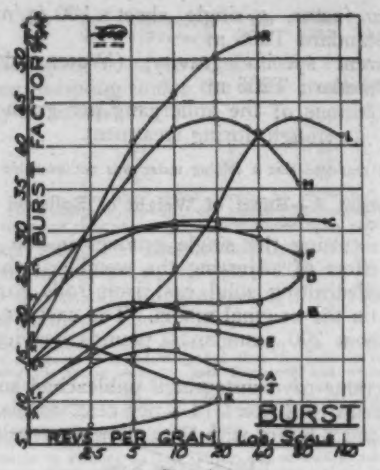


FIG. 6

lumps. To examine the effect on beating, an unbleached sulphite pulp V was milled at different consistencies for different times.

It appears that the different properties reach a maximum around 3 per cent and there is scarcely any additional or different action at 4 per cent. As 3 per cent is easier to handle as regards measurement it was adopted as the standard consistency.

Experiment G—Effect of Temperature on Beating

In order to study the effect of temperature, pulp Z was beaten at 5, 10 and 25 Rpg. at about 25 and 40 deg. C.

TABLE VIII

Temperature	Rpg.	S.G.	B.F.	B.L.	T.F.
42-38 deg. C.	5	.61	35	5180	145
38-36 deg. C.	10	.66	40	5800	118
36-33 deg. C.	25	.73	42	6880	108
25 deg C.	5	.63	34	5060	140
25-24 deg. C.	10	.66	38	6100	119
24 deg. C.	25	.71	44	7230	101

There are no significant differences in the two sets of figures and it is probable that the temperature has little effect within the normal range.

Experiment H—Accuracy of Repetition

Different lots of 55 grams of pulp Z were milled at 2.5 per cent consistency by two operators (a) and (b). The successive tests by (a) were several days apart, while (b) completed his tests on the same day.

TABLE IX

	Burst Factor				Tear Factor			
Rpg.	10	20	40	90	10	20	40	90
(a)	35	39	(40)	43	112	90	80	55
	35	40	43	45	104	90	87	57
	34	39	42	43	110	93	81	62
(b)	35	41	44	..	100	86	71	..
	35	40	43	..	104	87	72	..
	36	41	44	..	101	89	78	..
Ave.	35.0	40.0	42.7	43.7	106	8	78	58
Max. Dev.	3%	2½%	(7) 2½%	3%	6%	5%	9%	7%

	Breaking Length				Appt. Sp. Gravity				D. Time	
Rpg.	10	20	40	90	10	20	40	90	40	90
(a)	5700	6400	6500	7200	.72	.74	.80	.89	8.4	43
	5800	6400	7300	7600	.70	.75	.81	.89	8.2	40
	5800	6700	7300	7900	.68	.72	.80	.88	8.2	44
(b)	5600	6700	7300	....	.69	.75	.82	..	8.6	..
	6100	6700	6800	....	.69	.74	.80	..	8.0	..
	5300	6600	7300	....	.70	.73	.82	..	8.2	..
Ave.	5720	6590	7000	7590	.695	.738	.818	.887	8.3	42.3
Max. Dev.	7%	3%	7%	5%	5%	2%	2%	1%	5%	6%

Additional comparable tests to the above, the first of which was made a month later, are as follows:

TABLE X

	Breaking Length			Tear Factor		
Rpg.	10	20	40	10	20	40
Av. (Table VIII)	5700	6600	7000	106	89	78
Feb., 1934	6500	6600	7400	95*	80*	74*
March, 1934	5700	6500	7300	116	91	75
March, 1934	6600	6700	6900	116	92	72
April, 1934	6100	7000	6900	115	90	79
August, 1934	6200	6700	6800	116	94	81

* It is believed that the tearing tester was out of adjustment for these tests.

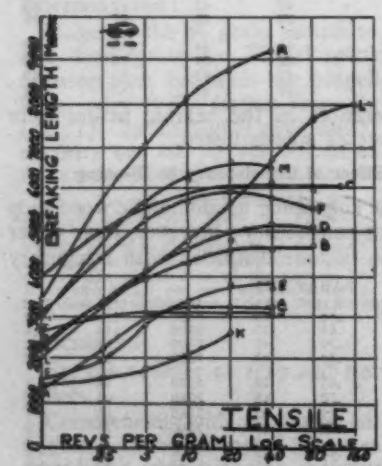


FIG. 7

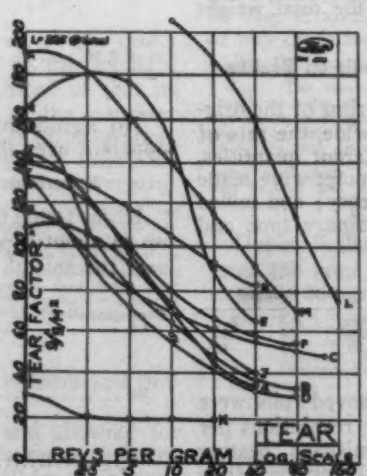


FIG. 8

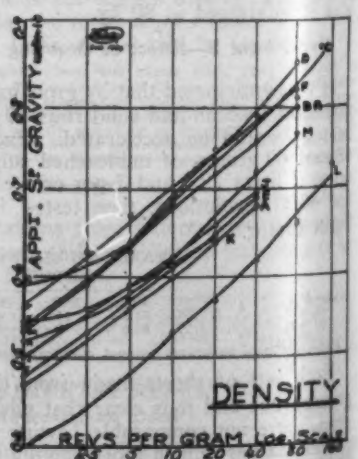


FIG. 9

FIG. 10

FIG. 11

From this it will be seen that the results have been remarkably consistent especially if allowance is made for minor changes in technique during the development of the present method.

Experiment I—Effect of Amount of Stock on Beating Action

The agreement of the test results irrespective of the quantity of stock in the tub has been satisfactorily demonstrated a number of times. The following results illustrate an extreme case. 66 grams of pulp Z were milled at 3 per cent consistency for the equivalent of 5, 10, 20 and 40 revolutions per gram, 6 grams being extracted at the end of each beating period for the various tests. 40 and 100 grams of the same pulp at 3 per cent were then milled for 400 and 1000 revolutions respectively (10 revolutions per gram) and then tested.

TABLE XI

Rpg.	5	10	20	40	10	10
Grams Pulp	66	60	54	48	40	100
Basis Weight	58.5	59.2	60.6	60.8	60.8	58.4
S. G.	.64	.69	.73	.78	.68	.68
Burst Factor	33.9	36.5	40.2	37.3	36.6	37.1
Breaking Length	5630	6200	6720	7100	6170	5790
Tear Factor	120	116	94	81	108	111
Drainage Time	4.5	4.6	5.7	8.5	4.7	4.5

It will be noted that the three sets of figures for the chosen point at 10 Rpg. agree very well, indicating that the beating is independent of the quantity of stock in the tub.

Experiment J—Experimental Results on Various Wood Pulps

Figs. 5, 6, 7, 8 and 9 represent the beating curves developed for a number of pulps of different kinds and qualities, using a kollergang with runner weighing 90 kg.

Pulps A, B, C and D represent the four varieties of bleached sulphite pulps and circulated by the TAPPI Fibrous Raw Materials Committee in 1933, lettered in the same way and comprising a soft weak specialty, a good Bond, a Glassine and a second quality Bond or utility pulp, respectively.

E and F are respectively Brown Company's Solka and Dexter bleached mitscherlich pulps, subsequently sent round by the same committee for another cooperative test. (*10*)

J is a recent sample of bleached sulphite made from southern pine.

K represents commercial bleached sulphite from aspen.

L is fairly good Swedish kraft.

M is easy bleaching Swedish kraft.

R is very strong Swedish unbleached sulphite.

V is medium strong Swedish unbleached sulphite. See Table VII.

Z is bleachable Finnish sulphite. See Table X.

Figs. 10, 11, 12 and 13 are photomicrographs illustrating the beating progress of Pulp C at 20, 40, 80 and 120, rpg., respectively.

Experiment K—Test Results on Rope Half-Stuffs

Samples of very strong unbleached, and semi-bleached rope stocks which had been previously cooked and washed in a paper mill, were tested according to the methods de-

FIG. 12

FIG. 13

scribed, except that the stock was beaten at 2.2 per cent consistency.

TABLE XII

Stock	Rpg.	B.W.	S.G.	B.F.	B.L.	T.F.	D.T.
Strong Unbleached Rope...	0	67.5	.45	38	4700	472	3.8
	20	61.6	.53	54	7050	445	4.5
	40	63.2	.59	56	7890	277	4.6
	80	56.7	.66	58	8300	150	7.3
	120	62.5	.75	55	8450	103	23.0
Strong Semi-Bleached Rope	0	61.7	.45	42	5320	479	4.5
	20	60.4	.55	61	7500	321	4.6
	40	62.6	.60	64	8850	231	4.7
	80	61.3	.67	64	9390	144	7.4
	120	61.6	.76	59	9050	89	33.4

Unbleached strong rope half-stuff is probably one of the most difficult of all paper making pulps to handle, and yet it will be noticed that the results show remarkable uniformity. The effect of the bleaching operation is quite apparent.

Experiment L—Test Results on Rag Half-Stuffs

Samples of a bleached medium grade No. 1 muslin were tested, together with a sample of the same stock which had been degraded by over-bleaching. These stocks gave much trouble with roping round the disintegrator propellor, so before disintegration, the half-stuff was snipped into pieces about ¼ inches long. The stock in the tub was also diluted to 1.5 per cent consistency for the same reason. The No. 4 muslin half-stuff gave no trouble with roping and was processed as for wood pulps at 3.0 per cent consistency.

TABLE XIII

Stock	Rpg.	B.W.	S.G.	B.F.	B.L.	T.F.	D.T.
No. 1 Muslin Bleached....	0	64.3	.45	19.5	2090	316	4.7
	10	57.2	.50	20.2	2540	263	5.5
	20	60.6	.53	20.1	2710	254	5.3
	40	59.5	.56	17.8	2790	171	6.1
	80	60.0	.61	14.6	2650	92	7.7
No. 1 Muslin Overbleached	0	60.8	.46	23.2	2520	326	4.8
	10	59.7	.49	22.8	2850	241	5.6
	20	61.3	.54	22.8	3130	215	5.6
	40	59.7	.59	19.5	3120	135	6.6
	80	58.5	.61	14.5	2910	81	8.7
No. 4 Muslin Bleached...	0	64.8	.35	9.9	1410	156	3.7
	10	58.4	.50	10.7	1840	74	5.6
	40	62.4	.54	8.8	1850	50	6.0
	20	61.7	.58	7.4	1770	32	8.1
	80	61.9	.63	6.9	1900	18	17.9

The effect of over-bleaching in the second sample is shown by increased bursting and tensile strengths, a decrease in the tearing strength and an increase in the rate of wetting. The last sample is a very poor grade of rag, suitable for use only as a filler.

Experiment M—Results of Eight Different Kollergangs on the Same Pulp

(This experiment will be carried out when eight new kollergangs, four of which have been ordered for abroad, are delivered. Results have not been completed before going to press.

Literature Cited

(1) H. A. Harrison, "The Beating of Wood Pulp in the Laboratory and Mill." Proc. Tech. Sect. P.M.A., XI, Part 2: 272-352 (March, 1931).
(2) G. K. Bergman, "Studies on Various Methods for Determining Cooking Degree and Strength of Pulp." Report XXVI from the Central Laboratory in Helsingfors (1932).
(3) F. C. Peterson, et al., "Comparison Between Flint Pebbles and Porcelain Balls on Pebble Mill Test." Paper Trade J. 93, No. 16: 36-38 (Oct. 15, 1931); 97, No. 4: 37-40 (July 27, 1933). "Pulp Consistency Variables in Pebble Mill Test." Paper Trade J. 94, No. 14: 35-39 (April 7, 1932). "Effect of Pebble Weight Variation," Paper Trade J. 96, No. 20: 26-28 (May 18, 1933).
(4) H. W. Morgan, "A Comparison of Several Methods for Processing Pulp Test Samples." Paper Trade J. 98, No. 15: 44-46 (April 12, 1934).
(5) F. A. Simmonds and P. K. Baird, "Processing Variables in Evaluating Pulps by the Pebble and Rubber Covered Ball Mill Methods." Paper Trade J. 98, No. 20: 33-42 (May 17, 1934).
(6) Papier Fabrikant No. 4, 1934—English translation World's Paper Trade Rev. 101, No. 10: 762-768, 806-813 (March 9, 1934).
(7) L. G. Cottrall and J. L. Gartshore, "A New Type of Laboratory Beater for Beating Investigations." World's Paper Trade Rev. 102, No. 5: 320-332 (Aug. 3, 1934); 102, No. 6: 412-418, 458-464 (Aug. 10, 1934).
(8) K. G. Jonas and P. Schlechter, "Concerning the Beating Process in the Hollander." Wochenbl. fur Papierfabr. 63, No. 23a: 42-46 (June 4, 1932).
(9) H. U. Kiely and H. C. Schwalbe, "Pulp Specifications Committee Progress Report." Paper Trade J. 98, No. 19: 36-39 (May 10, 1934).
(10) H. C. Schwalbe, "TAPPI Pulp Specifications Committee Progress Report." Paper Trade J. 99, No. 23: 35-42 (Dec. 6, 1934).

Special Types of Rosin Size and Their Physical Properties*

By Judson A. DeCew[1]

Abstract

Sizing can be obtained from either the resinate or free rosin but the resinates are more sensitive to adverse chemical reactions and consequently they are generally stabilized.

The stabilizer, however, is a detriment unless conditions require it.

pH control is valuable under certain conditions and under others it may mean nothing or be positively deceptive.

A proper knowledge of the chemical reactions that take place between rosin size, alum and other coagulating salts under the varied conditions of time, temperature and concentration, is of vital importance to the sizing result.

Saponification is the process of converting a compound ester into a fatty acid and an alcohol. Soaps are salts of the fatty acids. Soaps may be made directly from the fatty acid by neutralizing it with an alkali. When this is done a weaker alkali may be used than that necessary to decompose the fat and less temperature and pressure is required for the reaction.

Rosin is a material containing about 90 per cent of abietic acid and therefore, in saponification acts in the same way as a fatty acid. This is the reason why in the saponification of rosin, sodium carbonate is generally used. Another reason is that during saponification with a carbonate, the evolution of carbonic acid gas, produces a stirring action that aids the reaction.

Rosin is not a chemically uniform product and a part of it saponifies more rapidly than the rest. In order to get complete saponification for analytical purposes, it is necessary to use an alcoholic solution of caustic potash. It is difficult to get complete saponification of rosin with an aqueous solution of sodium carbonate.

This alkali combines with rosin when boiled in water in various proportions, depending upon the temperatures used and the time of boiling. It is therefore, impossible to make an accurate table showing the amount of free rosin that would result from boiling a given amount of rosin with sodium carbonate in aqueous solution.

Rosin Size Made with Caustic Soda

When making rosin size with caustic soda, the rate of

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, New York, N. Y., Feb. 18 to 21, 1935.
[1] Member TAPPI, Process Engineers, Mt. Vernon, N. Y.

saponification is much greater than with soda ash and the degree of saponification is more complete.

When rosin is boiled with a caustic soda solution using the saponification equivalent, for the rosin acids, the reaction is so rapid that a polymerized soap is formed that sets like a jell. If lesser amounts of alkali are taken, it is possible to make a rosin size with this alkali that is partially saponified and which will flow and act like an ordinary size made with the carbonate.

The purpose of using caustic soda for making rosin size is either to accelerate the reaction or to be able to make a size at a lower temperature or to obtain a more stable compound. In order to make a free rosin size it is necessary to use an aqueous concentration of alkali that will produce a soap of more than 10 per cent solids. With more dilute solutions, the soap formed will not dissolve the free rosin.

Caustic Soda Size Made by the Cold Process

A cold and very dilute solution of caustic soda will dissolve rosin and produce a dilute size solution in which the rosin is almost completely saponified. This size is generally made at a concentration of about 5 per cent of soap and at this dilution it will not dissolve free rosin but always contains free alkali. It is more stable than a free rosin size but not as stable as a neutral size made by boiling. The size is made by passing the cold dilute solution of causic soda over lumps of rosin, packed in a tower or tank. This is now a well known process. (*1*)

Such a size can also be made by stirring crushed rosin in the cold alkali in an agitating tank. It can also be made by grinding caustic soda and rosin together into a powder and dissolving this mixture in cold water, or by emulsifying melted rosin into a solution of cold caustic alkali. If caustic soda is added to an emulsion of a high free rosin size, a product very similar in character can be produced.

Any completely saponified rosin made with caustic soda is better if made with cold or warm water for in this way the final reaction which causes polymerization, is avoided.

There is another process which has not yet been introduced to the trade, which consists in making a high free rosin size with caustic soda without boiling.

This is based upon the discovery that at temperatures just below the point at which rosin becomes sticky and at concentrations of approximately 10 per cent of soap, this size will dissolve free rosin in large quantities. (*2*)

If, therefore, it is desirable to make a size at low temperatures, and if a free rosin size made with caustic soda is desirable, it is now possible to produce such a product.

Size Made with Silicate of Soda or Sodium Aluminate

Rosin size has been made in which the usual alkali has been replaced by either silicate of soda or aluminate of soda. The theory behind these products is that silicic acid or alumina may have some function in the sizing reaction. As rosin, however, has stronger acid properties than either silica or alumina, it will decompose these materials when they are used for saponification, throwing either the silica or alumina out of solution, unless the alkalis are used in large excess. Any sizing material made with these alkalis, must be much more strongly alkaline than any other type of size. It is only under exceptional conditions that such a size will be commercially valuable but it might be useful where a very stable size is required.

Ammonia Size

Ammonia is a volatile caustic alkali but it saponifies rosin even more rapidly than caustic soda. Its hydrolytic effect is so strong that an ammonia soap is always either a jell or a solid if made under ordinary conditions. This is the reason that although this product has been mentioned in the literature of the art, there is no evidence that it has ever been made or used commercially for the sizing of paper.

It decomposes rapidly, and is one of the most unstable sizes that can be made and, therefore, it is a product that would be very difficult to put on the market in the form of prepared size. The chief purpose of making such a size is to obtain some special result from its peculiar properties.

It has been recently discovered, however, that an ammonia soap can be used in such a manner that it will actually size a paper that contains alkaline fillers. This fact having been demonstrated, it is desirable to seek an explanation for this new result in the properties of this special type of soap. It now seems clear that the reason for this is the fact that a resinate or soap produced from a volatile alkali will completely decompose under conditions where a sodium or potassium soap can never be completely decomposed. As any paper containing an alkaline filler cannot be acidified, there is no way in which the sodium resinate can be decomposed in the presence of such a material. (*3*)

After this special application for an ammonia soap was discovered, a new and simple method for making an ammonia size was developed which had never before been suggested in any publication and consequently, there is now opening up a method for sizing paper which may have a very far reaching effect upon the properties of those types of paper that are more useful when they have no total acidity whatever.

Commercially Prepared Size and Standard Methods of Saponification

As the largest part of the rosin size used in this country is made by firms that have specialized in the art of rosin saponification, it is desirable to mention that the uniformity of such products is the result of carefully controlled methods of manufacture.

As the character and stability of rosin size is affected by the time of boiling and the temperatures used and as its properties are different, depending upon the type of cooker used, and the amount of circulation during the boiling process, it is necessary that once a particular type of size is accepted by the buyer, it should be duplicated with every shipment.

The chief difference in the types of prepared size on the market is in the grade of rosin used and the degree of stability of each size, which property is affected by special conditions.

It takes years for a manufacturer, making rosin size on a large scale, to become sufficiently skillful to make his size always with the required color and with the solubility adapted to the various methods of dilution found in different mills.

Dry Size

This may be a rosin soap that has been dried to a powder, and during the drying process the degree of saponification is carried further so that its solubility is increased over what it would have in the wet state. Such a size almost always dissolves readily in cold water and therefore, is more suitable to conditions where no diluting equipment is available.

It is also possible to make a combination of dry, pulverized materials that will saponify or emulsify on dilution

in warm or even cold water. Such products save the paper manufacturer the trouble of boiling size and he can produce either emulsions containing free rosin or solutions of a neutral size from such materials.

The Process of Emulsification

Emulsifying systems are required when an unstable or more easily decomposed size is desired which cannot be produced with the ordinary processes of dilution. The stability of the size solution or emulsion can be measured by the amount of standard alum required to completely decompose it and deposit an acidified precipitate.

The only way that the amount of alum required for sizing can be reduced to a minimum when sizing by the standard practice of adding to the beaters, first the size and then the alum, is to decrease the stability of the size.

The stability of rosin size varies with the following factors:

1. The amount of free rosin.
2. The amount of total alkali.
3. The amount of free alkali.
4. The use of stabilizing agents such as protective colloids.

A free rosin size containing no free alkali and no stabilizing agent, requires an accurately controlled emulsifying process. The best emulsifying system will dilute a size of this type, containing 60 per cent of free rosin and with no free alkali or stabilizer and will produce emulsions with the rosin in the colloidal state. The free rosin in such a size could be even further increased by the addition of protective colloids to the size, but there would be no advantage in doing this if the sensitivity of the size to decomposition should be lost.

No matter what emulsifying agent is used, whether it is rosin soap, glue, casein, free alkali or sulphonated oil, the amount of alum required depends entirely upon how sensitive the emulsion or solution is to complete demomposition. This means that the size must not only be precipitated, but that the chemical reaction must be completed, removing all alkali from the size. The most sensitive size, therefore, that can be made using only sodium resinate as the emulsifying agent, is one in which the emulsion is produced by a mechanical process without the use of any stabilizer. Such an emulsion is just on the point of decomposition and is an ideal one for sizing paper with the minimum of alum, providing the proper methods of application are adopted.

In respect to methods of application, there are two schools of thought. One is that the properties of the size should be adjusted to suit the methods of application that happen to exist in any particular plant and with this thought in mind, many different types of size have been produced. The other system is to adjust the methods of operation so that they will give efficient operation with a special type of size. The search in this direction has resulted in the discovery of many processes for sizing paper. These investigators claim that the process of sizing used covers at least two-thirds of the sizing problem and that the particular type of size is less than one-third in importance.

If the advocates of any particular type of size do not control the methods of application that are adapted to that size, they can only expect to solve a minor portion of the ills that beset the paper maker in his sizing difficulties.

Within the last ten years, there have been many important discoveries made in sizing methods and in the future, it may be demonstrated that these are really more important than the sizing composition.

Classification of Sizing Compositions in the Order of Their Stability

As the stability of the size depends, as already stated, on the degree of saponification, and the use of stabilizing agents such as free alkali, and protective colloids such as casein and glue, we can roughly classify these types in the order of their stability.

1. A size fully saponified by boiling and containing free alkali, and a protective colloid or emulsifying agent.
2. A size fully saponified by boiling and containing free alkali.
3. A fully saponified size made with rosin and cold caustic soda and containing free alkali.
4. A partially saponified size made with caustic soda and containing practically no free alkali.
5. A partially saponified size made with sodium carbonate and containing some free alkali.
6. A rosin soap saponified with sodium carbonate only to the point at which the soap formed will dissolve rosin to the point of saturation and having no stabilizer in the form of free alkali or organic colloids.
7. A rosin size saponified by ammonia which will decompose more rapidly and more completely than any size containing soda.
8. Somewhere within these lower brackets, we must place a rosin emulsion stabilized with caustic soda and a protective colloid, (4) the degree of stability depending upon the amount of alkali and colloid used and the fineness of the emulsion.

This classification is, of course, general, as the order might vary, depending upon the amount of stabilizers used.

Conclusion

It is useless to discuss the relative merits of these different types of size for each one is designed to suit a certain set of conditions, and all of these conditions have to be known before the proper size can be chosen.

Sizing can be obtained from either the resinate or the free rosin but the resinates are more sensitive to adverse chemical reactions and consequently they are generally stabilized.

The stabilizer, however, is a detriment unless the conditions require it.

Unless the chemical reactions between the size and alum are properly controlled any size may give variable results. pH control is valuable under certain conditions and under others it may mean nothing or be positively deceptive.

There is no one type of size that will size all kinds of paper under any conditions more efficiently than some other size. This will hardly be disputed by those who have had experience with different types of size.

The assumption that the sizing composition is the beginning and end of all sizing problems and the universal attempt to discover a magic compound that meets all conditions is the cause of so much controversy and confusion amongst special investigators.

A proper knowledge of the chemical reactions that take place between rosin size, alum and other coagulating salts under the varied conditions of time, temperature and concentration, is of vital importance to the sizing result.

Literature Cited

(1) U. S. Patent 1,759,526.
(2) U. S. Patent 1,958,470.
(3) U. S. Patent 1,965,630.
(4) U. S. Patent 1,882,680.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING MARCH 9, 1935

CIGARETTE PAPER

Standard Products Corp., Paris, Havre, 3 cs.; De Mauduit Paper Corp., Washington, Havre, 175 cs.

NEWSPRINT

N. Y. Evening Journal, Markland, Liverpool, N. S., 361 rolls; N. Y. Tribune, Markland, Liverpool, N. S., 1702 rolls; World Telegram, Markland, Liverpool, N. S., 582 rolls; Bridgeport Herald, Markland, Liverpool, N. S., 49 rolls; South Norwalk Sentinel, Markland, Liverpool, N. S., 65 rolls; Brooklyn Daily Eagle, Markland, Liverpool, N. S., 282 rolls; Gilman Paper Co., Markland, Liverpool, N. S., 636 rolls; Perkins Goodwin & Co., A. Ballin Hamburg, 345 rolls; Jay Madden Corp., Pr. Harding, Hamburg, 132 rolls; Jay Madden Corp., Scanyork, Hango, 365 rolls; International Paper Co., Cornerbrook, St. Johns, 3887 rolls; Lunham & Reeve, Inc., Argosy, Helsingfors, 221 rolls.

PRINTING PAPER

H. Reeve Angel & Co., Inc., Scanyork, Hango, 25 bls.; Gonrand Shipping Co., Scanyork, Hango, 125 rolls.

PACKING PAPER

Dingelstedt & Co., Washington, Hamburg, 11 cs.

WRAPPING PAPER

Walker Goulard Plehn Co., Pr. Harding, Hamburg, 91 rolls; Walker Goulard Plehn Co., Washington, Hamburg, 239 rolls; F. C. Strype, Black Hawk, Antwerp, 6 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Excalibur, Marseilles, 1 bl.; H. Reeve Angel & Co. Inc., Ausonia, Southampton, 6 cs.

TRANSFER PICTURES

Rohner Gehrig & Co., A. Ballin, Bremen, 2 cs.; Rohner Gehrig & Co., Bremen, Bremen, 16 cs.

DECALOMANIAS

L. A. Consmiller, A. Ballin, Hamburg, 12 cs.; Sellers Transportation Co., A. Ballin, Bremen, 5 cs.; Sellers Transportation Co., Bremen, Bremen, 46 cs.; L. A. Consmiller, Bremen, Bremen, 8 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Antonia, Liverpool, 5 cs. (duplex); B. F. Drakenfeld & Co., Antonia, Liverpool, 7 cs. (simplex).

TISSUE PAPER

Jay Madden Corp., A. Ballin, Hamburg, 1 cs., 63 bbls.; W. J. Byrnes, Berengaria, Southampton, 1 cs.

PHOTO PAPER

American Express Co., A. Ballin, Hamburg, 60 cs.

SURFACE COATED PAPER

Globe Shipping Co., A. Ballin, Hamburg, 2 cs.; Chas. Happel, Pr. Harding, Hamburg, 2 cs.; Gevaert Co. of America, Black Hawk, Antwerp, 19 cs.

BARYTA COATED PAPER

Globe Shipping Co., A. Ballin, Bremen, 35 crates.

METAL COATED PAPER

K. Pauli Co., A. Ballin, Bremen, 10 cs.

COLORED PAPER

D. C. Andrews & Co., A. Ballin, Hamburg, 3 cs.

GUMMED PAPER

G. Gennert, A. Ballin, Hamburg, 2 cs.

TRACING PAPER

C. Bruning, A. Ballin, Bremen, 25 cs.

WRITING PAPER

Japan Paper Co., American Banker, London, 4 cs.

STENCIL PAPER

Chas. Happel, Black Hawk, Antwerp, 5 cs.

MISCELLANEOUS PAPER

Kupfer Bros., A. Ballin, Bremen, 9 cs.; ———, A. Ballin, Bremen, 116 rolls, 13 bls.; Keuffel & Esser Co., Pr. Harding, Hamburg, 6 rolls, 43 cs.; Japan Paper Co., Tai Yang, Kobe, 7 cs.; U. S. Envelope Co., Tai Yang, Yokohama, 14 cs.; R. E. Thibaut, Paris, Havre, 5 bls.; Tiffany & Co., Paris, Havre, 3 cs.; Keller Dorian Paper Co., Excalibur, Marseilles, 7 cs.

RAGS, BAGGINGS, ETC.

Manufacturers Trust Co., A. Ballin, Hamburg, 415 bls. cotton waste; First National Bank of Boston, A. Ballin, Hamburg, 391 bls. cotton waste; Amtorg Trading Corp., Max Hoelz, Odessa, 1076 bls. rags; —— —Examelia, Barcelona, 104 bls. rags; ———, Excalibur, Alexandria, 83 bls. rags; ———, Excalibur, Alexandria, 59 bls. rags; P. Berlowitz, Excalibur, Alexandria, 150 bls, rags; Bank of N. Y. Trust Co., Troubadour, Barcelona, 162 bls. old cottons; Bank of N. Y. Trust Co., Troubadour, Barcelona, 83 bls. tares; Continental Bank Trust Co., Troubadour, Barcelona, 274 bls. old cottons; Continental Bank Trust Co., Troubadour, Barcelona, 74 bls. bagging; ——, Ausonia Southampton, 16 bls. rags; E. J. Keller Co. Inc., Black Hawk, —— — 45 bls. rags; Loumar Textile By-Products Co., Black Hawk, Antwerp, 240 bls. jute waste; Royal Manfg. Co., Black Hawk, Antwerp, 44 bls. cotton waste; N. Schwab & Sons, Black Hawk, Antwerp, 45 bls. cotton waste.

BONE GLUE

———, A. Ballin, Hamburg, 175 bags.

CASEIN

Kalbfleisch Corp., Southern Prince, B. Ayres, 50 bags.

WOODPULP

Castle & Overton, Inc., A. Ballin, Hamburg, 1181 bls. wood pulp, 236 tons; M. Sone, A. Ballin, Hamburg, 175 bls. wood pulp, 36 tons; Parsons & Whittemore, Inc., A. Ballin, Hamburg, 500 bls. wood pulp; Lagerloef Trading Co., Scanyork, Hango, 520 bls. sulphate, 104 tons; Castle & Overton, Inc., Scanyork, Hango, 1376 bls. sulphite, 274 tons; Perkins Goodwin & Co., Scanyork, Gdynia, 300 bls. wood pulp, 46 tons; Irving Trust Co., Fred. VIII, Oslo, 1980 bls. mechanical pulp, 401 tons; J. Andersen & Co., Fred. VIII, Oslo, 300 bls. wood pulp, 50 tons; E. M. Sergeant & Co., Fred. VIII, Oslo, 150 bls. chemical pulp, 25 tons; M. Sone, Argosy, Helsingfors, 300 bls. wood pulp, 50 tons; M. Sone, Washington, Hamburg, 600 bls. wood pulp, 92 tons; Parsons & Whittemore, Inc., Washington, Hamburg, 140 bls. wood pulp, 25 tons; Gottesman & Co. Inc., Washington, Czecho-Slovakia, 3477 bls. wood pulp, 539 tons; Bulkley Dunton & Co., Tennessee, ———, 2626 bls. wood pulp, 425 tons; Johaneson Wales & Sparre, Inc., Tennessee, Hernosand, 2625 bls. sulphite, 470 tons; Johaneson Wales & Sparre, Inc., Tennessee, Hernosand, 875 bls. chemical pulp, 175 tons; Johaneson Wales & Sparre, Inc., Tennessee, Hernosand, 1848 bls. sulphate, 308 tons; J. Andersen & Co., Tennessee, Hernosand, 2550 bls. sulphate, 425 tons.

WOOD PULP BOARDS

Lagerloef Trading Co., Argosy, Helsingfors, 214 bls., 31 tons; Lagerloef Trading Co., Argosy, Helsingfors, 39 rolls, 13 tons.

PORTLAND IMPORTS

WEEK ENDING MARCH 9, 1935

Gottesman & Co. Inc., Hjelmaren, Sweden, 2400 bls. wood pulp; Gottesman & Co. Inc., C. Corfitzon, Sweden, 8252 bls. wood pulp; Gottesman & Co. Inc., Greisheim, Sweden, 5515 bls. wood pulp; Bulkley Dunton & Co., Greisheim, ———, 1500 bls. wood pulp; Bulkley Dunton & Co., Tennessee, ———, 8055 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING MARCH 9, 1935

Royal Manfg. Co., Black Hawk, Antwerp, 28 bls. rags; Royal Manfg. Co., Black Hawk, Antwerp, 380 bls. cotton waste; ———, Black Hawk, Antwerp, 33 bls. rags; Meredith Linen Mills, Black Hawk, Antwerp, 58 bls. flax waste; F. J. Fawcett, Black Hawk, Antwerp, 238 bls. flax waste; Elliott Addressing Machine Co., Tai Yang, Yokohama, 6 cs. paper; Gottesman & Co. Inc., Greisheim, Sweden, 1000 bls. wood pulp; Bulkley Dunton & Co., Greisheim, ———, 1125 bls. wood pulp; Parsons & Wittemore, Inc., America, ———, 300 bls. wood pulp; Parsons & Wittemore, Inc., Frankenwald, ———, 625 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING MARCH 9, 1935

Gilman Paper Co., Markland, Liverpool, N. S., 1892 rolls newsprint; H. G. Lichtenstein, Examelia, Casablanca, 687 bls. rags; Lagerloef Trading Co., Scanyork, Hango, 770 bls. sulphite, 130 tons; Lagerloef Trading Co., Scanyork, Hango, 2066 bls. sulphate, 345 tons; Lagerloef Trading Co., Scanyork, Hango, 290 bls. mechanical pulp, 78 tons; Castle & Overton, Inc., Scanyork, Hango, 146 bls. sulphite, 29 tons; Gottesman & Co. Inc., Greisheim, Sweden, 5500 bls. wood pulp; Bulkley Dunton & Co., Greisheim, ———, 150 bls. wood pulp.

WILMINGTON IMPORTS

WEEK ENDING MARCH 9, 1935

Lagerloef Trading Co., Scanyork, Hango, 5805 bls. sulphite, 1161 tons; Castle & Overton, Inc., Scanyork, Hango, 1071 bls. sulphite, 214 tons; Jay Madden Corp., Scanyork, Hango, 160 rolls newsprint.

BALTIMORE IMPORTS

WEEK ENDING MARCH 9, 1935

Congoleum Nairn Co., Examelia, Marseilles, 471 bls. rags; Frazar & Co., Tohsei Maru, Kobe, 334 bls. rags; Parsons & Whittemore, Inc., C. of Baltimore, ———, 125 bls. wood pulp; Parsons & Whittemore, Inc., C. of Havre, ———, 125 bls. wood pulp; Gottesman & Co., Inc., C. of Havre, Czecho-Slovakia, 2014 bls. wood pulp.

NEWPORT NEWS IMPORTS

WEEK ENDING MARCH 9, 1935

Bulkley Dunton & Co., Tennessee, ———, 12500 bls. wood pulp, 2267 tons; Johaneson Wales & Sparre, Inc., Tennessee, Hernosand, 1380 bls. sulphate, 233 tons; J. Andersen & Co., Tennessee, Hernosand, 600 bls. sulphate, 101 tons; Gottesman & Co. Inc., C. of Newport News, Sweden, 643 bls. wood pulp.

Brown Co. Makes President's Birthday Card

One of the interesting facts about the mammoth 150-foot birthday "card" which was presented to President Roosevelt was the extreme care which was exercised in selecting the paper for this unique greeting.

Because of the extraordinary length of the "card," it was necessary to employ paper of exceptional strength. Next, the accordion-like format demanded a stock which would withstand repeated folding. Another requirement was that the paper be such as to harmonize with the impressiveness with which the entire project was designed and executed. Finally, the paper for this historical document had to be such as to retain all these qualities permanently.

Careful consideration of the above factors by Ernest Dudley Chase, who conceived the novel idea, led to the selection of Brown's Linen Ledger, the well-known product of the L. L. Brown Paper Company, Adams, Mass. Substance 36 was chosen. As the "card" was 22" in width, the paper weighed about eight pounds, and the cover board about 22 pounds. Thus it probably was the most substantial greeting card on record—certainly the most voluminous one on record paper. The latter was furnished through the Storrs & Bement Company, Boston, and the "card" was by Rust Craft Publishers of that city, executed by Mr. Chase personally.

Leather Packings

Alexander Brothers, 406 North Third street, Philadelphia, Pa., have just issued an informing and interesting little booklet entitled "Leather Packings," which may be had from the company free for the asking.

The most important factors in obtaining successful results from leather packings are the quality and construction of the product, as well as the selection of the proper packing and its correct application by the user. Alexander Brothers, Inc., consistently make every effort to place in the hands of its customers packings that are perfect in every way. Through their "Controlled" method of manufacture and rigid system of inspection, the finished products are right in quality of material and excellence of workmanship, correct in measurements, and in general conformity with the firm's established standards.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, March 13, 1935.

Demand for the various standard grades of paper is well sustained. Supplies are moving into consumption in good volume for the season. Sales forces of the leading paper houses are conducting a strenuous campaign for business and are generally optimistic over the future outlook. Prices are holding to schedule, in most instances.

The newsprint paper market continues active. Production is being maintained in sufficient volume to take care of increased consumption. Advertising volume in the leading newspapers is running ahead of last year. Due to increasing costs, however, the price situation is still considered unsatisfactory.

Conditions in the fine paper market are satisfactory. Demand for book, cover, writing and ledger papers is fairly persistent. Prices are steady. Tissues are going forward in good volume. The coarse paper market is holding its own. Kraft specialties are in brisk request. The paper board market is fairly active.

Mechanical Pulp

The ground wood pulp market is exhibiting a fairly strong undertone. Manufacturing operations in the United States, Canada and abroad are keyed to demand, with the result that the statistical position of the industry is sound. Prices are generally holding to formerly quoted levels, and reports of shading are infrequent.

Chemical Pulp

Steadiness prevails in the chemical pulp market. Demand for both domestic and imported grades is well up to average for the season. Kraft pulp continues to display strength. Domestic and foreign bleached sulphite are still quoted at from $2.75 to $2.85, on dock, Atlantic, Gulf and West Coast ports.

Old Rope and Bagging

The old rope market continues listless. Demand for domestic and foreign old manila rope is light. Small mixed rope is only moving slowly. No radical price changes have been reported. The bagging market is steady to firm. Offerings are rather restricted at present. Roofing bagging is attracting more attention.

Rags

Paper mill demand for domestic rags is moderately active. New Cotton cuttings are stronger, especially No. 1 white shirt cuttings and fancy shirt cuttings. Roofing grades continue firm. The imported rag market is affected by the uncertainty in foreign exchange, and quotations, in most instances, are nominal.

Waste Paper

The paper stock market is steadier than of late. Board mill demand for the lower grades is improving. Offerings of strictly folded news are limited and price are somewhat firmer. The higher grades of waste paper are holding up well, especially white envelope cuttings and hard and soft white shavings.

Twine

Most of the business transacted in the local twine market during the past week was along routine lines. With the approach of Easter, however, trading should become more lively. Despite keen competition for desirable orders prices are fairly steady and the outlook for the future is considered promising.

PHILADELPHIA MARKET TREND ASCENDS

(Continued from page 22)

After moving to several addresses Mr. Royal located in Bryn Mawr, which is still operated in connection with the main factory and office at Seventh and Grange streets in Olney. After serving as director, Mr. Royal was elected vice president, with Irwin N. Megargee president. Mr. Royal's last official act in the capacity of vice president was to appoint a committee to attend Mr. Megargee's funeral. Mr. Royal is president of T. M. Royal & Co.

Allen E. Whiting at the time of signing this charter was manager of the Philadelphia branch of the Whiting Paper Company, located at 18 South Sixth street. In 1907, with his brother-in-law, he formed the Whiting-Patterson Paper Company and located at 1023 Vine street, where he remained until 1917, when they moved to their present location at 320 North Thirteenth street. Mr. Whiting is president of the Whiting-Patterson Paper Company.

Edward A. Wilson originally started in business during the Civil War days, with his brother, William A., trading under the name of Henry L. Wilson Sons Company, now The Wilson Paper Company at 118 North Third street. Mr. Wilson died about seven years ago. The business is now conducted by Edward A. Wilson, son of William A. Wilson.

Myer Magil Bound for Palestine

Myer Magil, treasurer and president of the Penn Card and Paper Company, Inc., 410 Race street, Philadelphia, and his wife, are sailing on the S. S. *Conte Di Savoia* on March 16 for Palestine. They will be away from eight to ten weeks.

Link-Belt Motorized Reducer Catalog

Recently off the press is a 20-page illustrated Catalog No. 1515 published by Link-Belt Company, Philadelphia, Chicago, San Francisco, devoted to its newly developed line of motorized speed reducers, in which the motor is mounted directly on the side of the reducer housing, thus making a shaft coupling or a motor base plate unnecessary.

It shows by means of an example how the proper reducer can be selected from the tables, which give dimensions, capacity ratings, and speed ratios. The book will be sent to anyone requesting it on business letterhead.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, March 13, 1935.

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Prices are holding to schedule. The pulp is quoted at from $42.50 to $45 per ton, in bulk; while the powder is selling at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—Conditions in the bleaching powder market are fairly satisfactory. Demand is moderately active. The contract movement is seasonal. Prices are firm. Bleaching powder is quoted at from $1.90 to $2.15 per 100 pounds, in drums, at works.

CASEIN.—The casein market remains firm. Domestic standard ground is quoted at 12½ and finely ground at 13 cents per pound; while Argentine standard ground is selling at 13 and finely ground at 13¼ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Steadiness prevails in the caustic soda market. Prices are holding to formerly quoted levels. Solid caustic soda is quoted at from $2.60 to $3.10; while the flake and ground are selling at from $3 to $3.05 per 100 pounds, in drums, at works.

CHINA CLAY.—The china clay market is fairly active. Contract shipments are moving regularly. Imported china clay is still quoted at from $13.50 to $21 per ton, ship side; while domestic paper making clay is selling at from $6.50 to $12 per ton, at works.

CHLORINE.—Paper mill demand for chlorine is fairly persistent. The contract movement is normal for the season. Prices are steady. Chlorine is quoted at from $2 to $2.40 per 100 pounds, in tanks, or multi-unit cars, in ton lots, or over, at works.

ROSIN.—The rosin market continues firm. Paper making gum rosin is quoted at $4.75 and wood rosin at $4.60 per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent rosin size is selling at $2.68 per 100 pounds, in tank cars, at works.

SALT CAKE.—Business in the salt cake market is fairly brisk. Prices remain unchanged. Salt cake is quoted at from $12 to $13 and chrome salt cake at from $11 to $12 per ton, at works. Imported salt cake is selling at from $12 to $13 per ton, on dock.

SODA ASH.—The soda ash market is displaying strength. Demand from the paper mills is well sustained. Prices are steady. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.05; in bags, $1.20; and in barrels, $1.50.

STARCH.—Most of the business transacted in the starch market during the past week was along routine lines. Prices are steady. Special paper making starch is quoted at $3.75 per 100 pounds, in bags; and at $3.84 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—Demand for sulphate of alumina is well sustained. Contract shipments are moving freely. Commercial grades are still quoted at from $1.35 to $1.50; while iron free is selling at from $1.90 to $2.05 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market is steady. Sulphur is quoted at $18 per long ton on orders of 1,000 tons, or over, on yearly contracts; and at $20 per ton on any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—No radical changes have transpired in the talc market. Prices are holding to formerly quoted levels. Domestic talc is selling at from $16 to $18 per ton, at eastern mines; while imported talc is selling at from $23 to $30 per ton, on dock.

Market Quotations

Paper

(F. o. b. Mill)

Ledgers	6.50	@	—
Bonds	6.00	@	—
Index	6.00	@	—
Writings—			
Extra Superfine	6.50	@	—
Superfine	6.25	@	—
Tub sized	5.75	@	—
Engine sized	5.50	@	—
Book, Cased—			
S. & S. C.	5.35	@	5.75
S. & S. C. Litho.	5.60	@	6.00
M. F.	5.10	@	5.50
Coated and Enamel	5.90	@	6.55
Coated Litho	5.90	@	6.55
Tissues—Per Ream—			
White No. 1	.82½	@	.85
White No. 2	.67½	@	—
Anti-Tarnish M. G. only	1.00	@	—
Colored	.85	@	—
Kraft	.70	@	—
Manila	.67½	@	.70
Manila—			
No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00
Butchers	4.00	@	4.50
Fibre Papers—			
No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75
Common Bogus	1.50	@	3.00
Screenings	2.50	@	3.50
Glassine—			
Bleached	.11	@	—
Unbleached	.09	@	—

(The following Quotations are Delivered New York)

News, per ton—			
Roll, contract	40.00	@	—
Rolls, spot	40.00	@	—
Sheets	45.00	@	—
Kraft—			
No. 1 Northern	4.12½	@	4.75
Standard	4.00	@	—
Southern	3.87½	@	—
Boards—per ton—			
News	40.00	@	45.00
Chip	37.50	@	40.00
Sgl. Mla. LL Chip.	47.50	@	52.50
Jute Lined Chip	47.50	@	52.00
White Patent Coated.	60.00	@	65.00
Binders Boards	67.00	@	75.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—			
Moist	21.00	@	22.00
Dry	21.00	@	22.00

(F.o.b. Mill)

No. 1 Domestic and Canadian	18.00	@	24.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Division 1	2.85	@	—*
Division 2	2.80	@	—*
Division 3	2.75	@	—*
Prime Qualities—			
Class 1. All Prime Easy Bleaching	2.25	@	—*
Other Than Easy Bleaching—			
Class 2. Higher Than Standard	2.20	@	—*
Class 3. Standard	2.15	@	—*
Class 4. Lower than Standard	2.10	@	—

(On Dock, Atlantic Ports)

Kraft No. 1	1.70	@	1.80
Kraft No. 2	1.50	@	1.60

(F.o.b. Pulp Mill)

Kraft Domestic	1.70	@	2.35

(Delivered)

Soda Bleached	2.50	@	—

*Add 60 Cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	5.75	@	6.00
Silesias No. 1	3.75	@	4.00
New Unbleached	6.25	@	6.50
New Soft Blacks	3.00	@	3.25
Blue Overall	3.50	@	3.75
Fancy	2.50	@	2.75
Washables	1.75	@	2.00
Mixed Khaki Cuttings	3.00	@	3.25
O. D. Khaki Cuttings	3.75	@	4.00
Men's Corduroy	1.50	@	1.75
New Mixed Blacks	2.50	@	2.75

Old Rags

White, No. 1—			
Repacked	3.00	@	3.50
Miscellaneous	2.75	@	3.25
White, No. 2—			
Repacked	1.75	@	2.25
Miscellaneous	1.50	@	1.75
Thirds and Blues—			
Repacked	1.50	@	1.75
Miscellaneous	1.25	@	1.50
Black Stockings	2.50	@	3.00
Roofing Rags—			
No. 1	1.20	@	1.30
No. 2	1.10	@	1.15
No. 3	.95	@	1.00
No. 4	.95	@	1.00
No. 5A	.80	@	.85

Foreign Rags

New Rags

New Dark Cuttings	1.60	@	1.70
New Mixed Cuttings	1.75	@	1.85
New Light Silesias	3.75	@	4.00
Light Flannelettes	3.75	@	4.00
Unbleached Cuttings	6.50	@	6.75
New White Cuttings	6.50	@	6.75
New Light Oxfords	3.25	@	3.50
New Light Prints	2.75	@	3.00

Old Rags

No. 1 White Linens	7.50	@	8.00
No. 2 White Linens	6.50	@	7.00
No. 3 White Linens	4.50	@	5.00
No. 4 White Linens	2.25	@	2.50
No. 1 White Cotton	4.25	@	4.75
No. 2 White Cotton	3.25	@	3.75
No. 3 White Cotton	2.50	@	2.75
No. 4 White Cotton	1.90	@	2.15
Extra Light Prints	2.00	@	2.25
Ord. Light Prints	1.75	@	1.85
Med. Light Prints	1.55	@	1.65
Dutch Blue Cottons	1.75	@	1.85
French Blue Linens	2.30	@	2.40
German Blue Linens	2.15	@	2.25
German Blue Cottons	1.70	@	1.80
Checks and Blues	1.30	@	1.40
Linsey Garments	1.40	@	1.60
Dark Cottons	1.00	@	1.10
Old Shopperies	.95	@	1.00
New Shopperies	.90	@	1.00
French Blues	1.70	@	1.90

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	1.50	@	1.60
Domestic	1.40	@	1.50
Wool Tares, light	1.20	@	1.30
Wool Tares, heavy	1.20	@	1.30
Bright Bagging	1.15	@	1.25
Manila Rope—			
Foreign	1.85	@	2.00
Domestic	1.75	@	2.00
Small Mixed Rope	1.10	@	1.25
New Burlap Cut	2.00	@	2.25
Hessian Jute Threads—			
Foreign	2.60	@	2.75
Domestic	2.80	@	3.00

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.75	@	2.85
Ordinary Hard White No. 1	2.15	@	2.25
Hard White No. 2	1.95	@	2.05
Soft White No. 1	1.80	@	1.85
Flat Stock—			
Stitchless	.65	@	.75
Over issue Mag.	.65	@	.75
Solid Flat Book	.45	@	.50
Crumpled No. 1	.35	@	.40
Solid Book Ledger	1.50	@	1.65
Ledger Stock	1.00	@	1.10
New B. B. Chips	.30	@	.35
Manilas—			
New Env. Cut	1.70	@	1.80
New Cuttings	1.35	@	1.40
Print	Nominal		
Bogus Wrapper	.40	@	.50
Container	Nominal		
Old Kraft Machine—			
Compressed bales	1.10	@	1.20
News—			
No. 1 White News	1.20	@	1.30
Strictly Overissue	.60	@	.65
Strictly Folded	.25	@	.30
No. 1 Mixed Paper	.15	@	.20

ENGLISH ECCO CLAYS CLAYS

Uniform—Superior—Dependable

ENGLISH CHINA CLAYS SALES CORPORATION
551 FIFTH AVENUE, NEW YORK CITY

WOOD PULP AGENTS

PRICE & PIERCE, Ltd.,

60 EAST 42nd ST.
NEW YORK

. . . your best

GUARANTEE of SERVICE-AS-PROMISED

You find no "fiction" on the PROPELLAIR NAME-PLATE. These are FACTS regarding FAN PERFORMANCE—rated by methods as adopted by the Society of American Heating and Ventilating Engineers. Every PROPELLAIR is guaranteed to live-up to the specifications appearing on its name plate. For perfect satisfaction, be sure it's a PROPELLAIR.

PROPELLAIR TRADE-MARK REG. INC.
Desk M-2, Springfield, Ohio

The Mills that run

LINDSAY FOURDRINIER WIRES

recognize their good quality and service. This superior service is due to the work of our Research Department and our control over every step in the manufacture of the wires.

Lindsay wires are uniform in mesh and material, with edges that lie flat. Seams in either the stitched or brazed type are furnished to meet the requirements of different paper machines.

THE LINDSAY WIRE WEAVING COMPANY
14025 Aspinwall Ave. Cleveland, O.

Density CONTROL EQUIPMENT CORP. MEYERS CONTROLS BUFFALO N.Y. *Viscosity*

CONTROL EQUIPMENT CORPORATION

1707 Main St. Buffalo, New York

Twines
(F. o. b. Mill)

Coarse Polished—			
India	.11¼	●	.12¼
Belg. White Hemp	.12¼	●	.13¼
India Compress	.11¼	●	.12¼
Fine Polished—			
Fine India	.18	●	.20
Special	.16	●	.18
E. C.	.25½	●	.27½
Unpolished—			
Box	.10	●	.10½
Paper Makers	.07	●	.12
Tube Rope	.09	●	.13½
Wall Paper	.09	●	.12½
Wrapping	.12	●	.17
Special	.12	●	—
Soft Fiber Rope	.10¼	●	.10¼

CHICAGO

Paper
(F. o. b. Mill)

Rag Bond	.12	●	.50
Water Marked Bulkhite Bond	.06¼	●	.11
Sulphite Bond	.05½	●	.11
Superfine Writing	.18	●	.24
No. 1 M. F. Book	.06½	●	.07¼
No. 2 M. F. Book	.05¾	●	.06¼
No. 1 S.&S.C. Book	.06¾	●	.07¼
No. 2 S.&S.C. Book	.05¾	●	.06½
Coated Book	.07	●	.12
Coated Label	.07	●	.08½
No. 1 Manila	.04¼	●	.05¼
No. 1 Fibre	.04¾	●	.05¼
No. 2 Manila	.04¼	●	.04¾
Butcher's Manila	.03¾	●	.03¾
No. 1 Kraft	4.75	●	5.00
Southern Kraft	3.88	●	4.25
No. 2 Kraft	3.88	●	4.25
Wood Tag Boards	.04¼	●	.06¾
Sulphite Screenings	.03	●	.03¾
Manila Tissue	.05¾	●	.07
White Tissue	.07	●	.09

(Delivered Central Territory)

News per ton—			
Rolls, contract	41.00	●	—
Sheets, open	46.00	●	48.50
Boards, per ton—			
Plain Chip	46.50	●	—
Solid News	50.00	●	—
Manila Lined Chip	55.00	●	—
Patent coated	65.00	●	—
Container Lined—			
85 Test, per 1000 sq. ft.			1.70
100 Test, per 1000 sq. ft.			1.85

Old Papers
(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope cuttings	1.70	●	2.00
No. 1 Hard White	1.40	●	1.65
No. 1 Soft White	1.25	●	1.50
Ledger & Writings	.70	●	.80
Solid Books	.60	●	.70
Blanks	1.00	●	1.05
Kraffs	.80	●	.90
New Kraft Cuts	1.20	●	1.30
Manila Env. Cuts	1.25	●	1.30
Ex. No. 1 Manila	.90	●	1.00
Print Manila	.40	●	.50
Overissue News	.40	●	.45
Old Newspapers—			
No. 1	.30	●	.35
Mixed Papers—			
No. 1	.15	●	.20
Roofing Stocks—			
No. 1	30.00	●	—
No. 2	28.00	●	—

PHILADELPHIA

Paper
(Delivered Philadelphia)

Bonds	.05 9/10	●	.38
Ledgers	.06 9/10	●	.40
Writings—			
Fine No. 3	.05	●	.06
Superfine	.10	●	.18
Extra Fine	.15	●	.36
Fine	.15	●	.36
Fine, No. 2	.10	●	.25
Book, M. F.	.05¾	●	.06¾
Book, S. S. & C.	.05	●	.07½
Book, Coated	.06½	●	.09
Coated Lithograph	.06¼	●	.08½
Label	.07	●	.11
No. 1 Jute Manila	6.25	●	—
Manila Sul., No. 1	5.25	●	—
Manila No. 2	3.00	●	—
No. 1 Kraft	5.00	●	—
Southern Kraft	4.75	●	—
Common Bogus	.03	●	.04½
News Print Rolls	40.00	●	—
Straw Board	40.00	●	45.00
News Board	40.00	●	—
Chip Board	37.50	●	—
Wood Pulp Board	70.00	●	85.00
Binder Boards—			
No. 1, per ton	75.00	●	80.00
No. 2, per ton	70.00	●	75.00
Carload lots	65.00	●	70.00
Tarred Felts—			
Regular	$2.25	●	$4.25
Slaters (per roll)	.84	●	.94
Best Tarred, 1-ply (per roll)	1.95	●	2.15
Best Tarred, 2-ply (per roll)	1.50	●	1.65
Best Tarred, 3-ply	2.00	●	2.25

Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No 1.	.03½	●	.04
New White, No. 2.	.03¼	●	.04
Light Silesias	.02½	●	.03
Silesias, No. 1	.03	●	.03½
Black Silesias, soft	.02½	●	.03
New Unbleached	.05	●	.05½
Washable, No. 1	.01½	●	.02
Blue Overall	.03½	●	.04
Cottons—According to grades—			
Washable, No. 2	.02½	●	.03
New Blue	.01½	●	.03
Fancy	.01½	●	.03
New Black Soft	.02	●	.04
New Light Seconds	.01½	●	.02
New Dark Seconds	1.50	●	1.75
Khaki Cuttings—			
No. 1 O.D.	.03	●	.04
No. 2 Mixed	.03	●	.04
Corduroy	.02	●	.03
New Canvas	.03½	●	.04½
New Black Mixed	.02½	●	.03½

Domestic Rags (Old)

White No. 1—			
Repacked	2.50	●	3.50
Miscellaneous	1.75	●	2.25
M. G.	3.00	●	3.75
Thirds and Blues—			
Miscellaneous	1.00	●	1.50
Repacked	1.50	●	2.00
Black Stockings (Export)	2.00	●	3.50
Roofing Stock—			
Foreign No. 1	.50	●	.75
Repacked	.70	●	.85

Bagging
(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	1.25	●	1.50
Domestic	1.50	●	1.75
Manila Rope	2.00	●	2.25
Sisal Rope	1.25	●	1.50
Mixed Rope	1.00	●	1.10
Scrap Burlaps—			
No. 1	1.25	●	1.50
No. 2	.80	●	1.00
Wool Tares, heavy	2.75	●	—
Mixed Strings	1.15	●	1.25
No. 1 New Light Burlap	2.25	●	2.50
New Burlap Cuttings	2.00	●	2.25

Old Papers
(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.25	●	2.30
No. 2 Hard White	1.90	●	2.00
No. 1 Soft White	1.80	●	1.85
No. 2 Soft White	1.25	●	1.30
No. 1 Mixed	—	●	.75
Solid Ledger Stock	1.50	●	1.60
Writing Paper	1.00	●	1.10
No. 1 Books, heavy	.55	●	.60
No. 1 New Manila	1.35	●	1.40
Print Manila	.50	●	.60
Container Manila	.45	●	.50
Old Kraft	1.00	●	—
No. 1 Mixed Paper	.20	●	—
Straw Board Chip	.20	●	—
Binders Board Chip	.20	●	—
Corrugated Board	.40	●	—
Overissue News	.50	●	—
Old Newspapers	.30	●	—

BOSTON

Paper
(F. o. b. Mill)

Ledgers—			
Sulphite	.06	●	.12½
Rag Content	.12	●	.30
All Rag	.36	●	.53½
Bonds—			
Sulphite	.07¼	●	.11
Rag Content	.12	●	.30
All Rag	.36	●	.45
Writings	.06½	●	.20
Superfines	.11	●	.31
Book, Super	.06	●	.09
Book, M. F.	.05½	●	.08½
Book, Coated	.08½	●	.18
Coated Litho	.09	●	.12
Label	.09½	●	.15
Jute Manila No. 1	.11	●	.13
Manila, Sul. No. 1	.04¼	●	.06¼
Manila, Sul. No. 2	.03¼	●	.04½
No. 1 Kraft	.04¼	●	.05
No. 2 Kraft	.04½	●	.04½
(F. o. b. Boston)			
Southern Kraft	.03½	●	.04½

(F. o. b. destination in carload lots, f. o. b. mill in less than carload lots.)

Common Bogus	.02	●	.02¼
(Delivered New England points)			
News Print Rolls	39.50	●	—
Straw Board, rolls .009	—	●	35.00
Straw Board in Sheets, basis 35s to 70s	—	●	40.00
Filled News Board	40.00	●	45.00
Chip Board	37.50	●	40.00
Chip Board (Creasing)	37.50	●	40.00
Single Manila Lined Chip	47.50	●	52.50
Single White, Patent Coated News Board (Bender)	55.00	●	65.00
Wood Pulp Board	70.00	●	75.00
Binder Boards (Standard Grade)	67.00	●	75.00

Old Papers
(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.00	●	2.20
No. 1 Soft White	1.75	●	1.90
No. 2 Mixed	.75	●	.80
Solid Ledger Books	1.75	●	—
Overissue Ledger Stock	1.15	●	1.30
Mixed Ledgers	.95	●	1.05
No. 1 Books, heavy	.55	●	.65
No. 1 Books, light	.50	●	.60
Crumpled Stitchless Book Stock	.50	●	.60
Manila Env. Cuttings	1.25	●	1.30
No. 1 Old Manila	.60	●	.65
White Blank News	1.20	●	1.25
No. 1 Kraft	.95	●	1.00
No. 1 Mixed Papers	.20	●	—
Print Manila	.40	●	.45
Overissue News	.45	●	.50
Old Newspapers	.22½	●	.30
Box Board Chips	—	●	.25
Corrugated boxes	.35	●	.40
Screening Wrappers	.45	●	.55

Bagging
(F. o. b. Boston)

Manila Rope—			
Foreign	1.70	●	1.80
Domestic	1.90	●	2.00
Transmission Rope	.90	●	1.00
Mixed Strings	.17½	●	.30
Jute Rope	1.35	●	1.40
Jute Carpet Threads	.65	●	.70
Gunny No. 1—			
Foreign	1.50	●	1.60
Domestic	1.25	●	1.35
Bleachery Burlap	4.00	●	4.50
Scrap Burlap	1.05	●	1.15
Scrap Sisal	1.00	●	1.10
Scrap Sisal for Shredding	1.10	●	1.25
Wool Tares, heavy	1.25	●	1.30
New Burlap Cuttings	1.45	●	1.50
Australian Wool Pouches	2.00	●	2.25
Heavy Baling Bagging	1.40	●	1.55
Paper Mill Bagging	.90	●	1.10
Bagging No. 2	.50	●	.55

Domestic Rags (New)
(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.01¾	●	.03
New White No. 1.	.05½	●	.06
New White No. 2.	.03½	●	.04
Silesias No. 1	.04	●	—
New Black Silesias	.02½	●	.03
New Unbleached	.05½	●	.06
Blue Cheviot	—	●	4.65
Fancy	.0185	●	.0195
Washable	.0165	●	.0170
Cottons—According to grades—			
Blue Overalls	—	●	.03½
New Black, soft	.04	●	.04½
Khaki Cuttings	.03¼	●	.03½
O. D. Khaki	.03	●	.03½
Corduroy	.01¾	●	.02
New Canvas	—	●	.05
B.V.D. Cuttings	—	●	.04½

Domestic Rags (Old)
(F. o. b. Boston)

Canvas	.04½	●	—
White No. 1—			
Repacked	—	●	2.00
Miscellaneous	2.50	●	2.75
White No. 2—			
Repacked	2.00	●	2.75
Miscellaneous	2.00	●	2.25
Twos and Blues	1.25	●	1.50
Thirds and Blues			
Repacked	2.00	●	2.75
Miscellaneous	2.00	●	2.25
Black Stockings	2.50	●	3.00
Roofing Stock			
No. 1	1.17½	●	1.23½
No. 2	.95	●	1.05
No. 3	.70	●	.80

Foreign Rags
(F. o. b. Boston)

Dark Cottons	1.00	●	1.10
New White Shirt Cuttings	5.50	●	6.00
Dutch Blues	2.00	●	2.50
New Checks & Blues	2.50	●	3.00
Old Fustians	1.55	●	1.60
Old Linsey Garments	1.35	●	1.45

TORONTO

Paper
(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.10¼	●	—
No. 2 Sulphite	.08½	●	—
No. 1 Colored	.10¼	●	—
No. 2 Colored	.09	●	.10
Ledgers (sulphite)			
Ledgers, No. 1	.14½	●	—
Ledgers, No. 2	.25½	●	—
Writing	.09	●	.09½
Book—			
No. 1 M. F. (Carloads)	6.20	●	—
No. 3 M. F. (Carloads)	5.70	●	—
No. 4 M. F. (carloads)	4.75	●	—
No. 1 S. C. (carloads)	6.65	½	—
No. 3 S. C. (carloads)	6.20	●	—
No. 4 S. C. (carloads)	5.20	●	—
No. 1 Coated and Litho	12.00	●	—
No. 2 Coated and Litho	10.50	●	—
No. 3 Coated and Litho	9.50	●	—
Coated tinted	14.00	●	—
Wrappings—			
Rag Brown	4.25	●	—
White Wrap	2.22½	●	—
"B" Manila	4.75	●	—
No. 1 Manila	5.25	●	—
Fiber	5.25	●	—
Kraft, M. F.	5.75	●	—
Kraft No. 2	5.25	●	—

(F.O.B. Cars Toronto)

News, per ton—			
Rolls (contract)	39.50	●	—
Sheets	42.00	●	—

Pulp
(F. o. b. Mill)

Ground Wood	18.00	●	20.00
Sulphite easy bleaching	40.00	●	—
Sulphite, news grade	38.00	●	—
Sulphite, bleached	50.00	●	55.00
Sulphate	50.00	●	—

Old Waste Paper
(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.00	●	2.10
Soft White	1.60	●	1.90
White Blk. News	1.35	●	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	●	1.00
Light and Crumpled Book Stock	.80	●	.90
Ledgers and Writings	1.00	●	1.05
Manilas—			
New Manila Cut	1.25	●	1.40
Printed Manilas	.50	●	.60
Kraft	1.00	●	1.30
News and Sorao—			
Strictly Overissue	.60	●	—
Strictly Folded	.50	●	—
No. 1 Mixed Paper	.40	●	—

Domestic Rags
(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.06	●	—
Fancy Shirt Cuttings	.02	●	—

SOLAR COLORS

We now offer new types of instantly dispersed Solar Colors which develop rapidly

GDC

General Dyestuff Corporation

230 Fifth Avenue, New York, N. Y.

PAPER TRADE JOURNAL

ESTABLISHED 1872

SIXTY-THIRD YEAR

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

Published Every Thursday by the LOCKWOOD TRADE JOURNAL CO., Inc.

GEO. S. MACDONALD, President. J. BANNINGA, Sec.-Treas.

Published at 34 No. Crystal St., East Stroudsburg, Pa.
Executive and Editorial Offices: 15 West 47th Street, New York
Chicago Office: 123 West Madison St.

TABLE OF CONTENTS

Paper Men Oppose Reciprocity with Canada.. 13
Forestry Operations Expand in Wisconsin... 14
New All-Direction Creping Machine..... 14
Chicago Paper Demand Fairly Active..... 15
Rag Content Paper Group Active..... 15
Sales of Foreign Style Papers in Japan..... 15
Boston Market Conditions Favorable..... 16
Book on Patent Law..... 16
Philadelphia Market Upswing Continues..... 18
Container Corp. Improvements..... 18
Japan Paper Co. Changes..... 18
Construction News..... 28
New Companies..... 28
Seven Paper Mills Have Perfect Record..... 29
Albert Paper Box Co. to Move..... 29
Bids and Awards for Government Paper..... 29
Otsego Falls Paper Mill Starts..... 29
Dwight Stocker Made Vice President..... 29
Editorial..... 30
Business Shows Gains up to 30 Per Cent in January and February..... 30
Accomplishments in Paper Research at the National Bureau of Standards..... 30
Weekly Production Ratio Report..... 31
Zellstofffabrik Waldhof Celebrates Its Fiftieth Anniversary..... 31
New Standard Oil Bulletin..... 31
Technical Section
Lake States TAPPI Discusses Waste Disposal..... 33
The Technical Man Sells His Services..... 34
Starts Brooklyn Testing Station..... 34
New England TAPPI and Connecticut Valley Superintendents Meet..... 35
Kalamazoo Valley Section Elects Officers... 36
Bogalusa Joins TAPPI..... 36
The Optical Characteristics of Paper..... 37
Our Present Knowledge of Rosin..... 42
Imports of Paper and Paper Stock..... 45
New York Market Quotations..... 48
Miscellaneous Markets..... 50
Market Quotations..... 52

THE PAPER TRADE JOURNAL is indexed in Industrial Arts Index

Want and For Sale Advertisements, 54-55

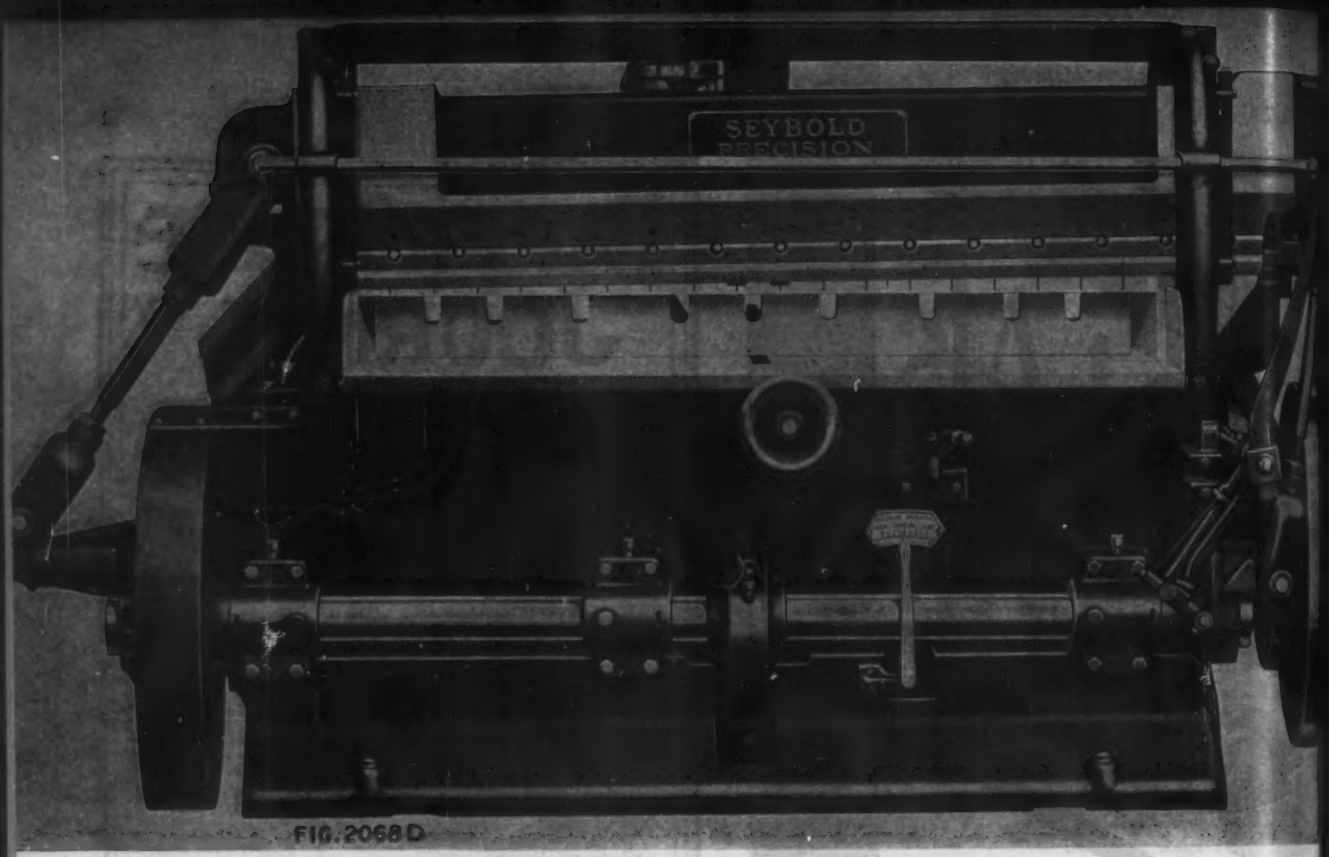


FIG. 2068 D

• You know of course that SEYBOLD Mill Cutters are fast—accurate—powerful—durable—but have you ever figured out how much the right cutter—a SEYBOLD—would

LOWER PAPER MILL PRODUCTION COSTS

It's worth serious and immediate consideration regardless of the paper you trim—cockle stock, mimeograph, onion skin, plated or cloth finish. Top, bottom and middle sheets are always cut with precision accuracy.

• SEYBOLD MILL CUTTERS are built in a size to meet every demand of the modern paper mill. They are also safeguarded against repeating and over loading.

SEYBOLD MACHINE COMPANY

Division of Harris-Seybold-Potter Company, DAYTON, OHIO

★ NEW YORK
E. P. LAWSON CO., INC.

★ CHICAGO
CHAS. N. STEVENS CO., INC.

★ ATLANTA
J. H. SCHROETER & BRO., INC.

★ SAN FRANCISCO
HARRY W. BRINTNALL CO.

★ TORONTO
THE J. L. MORRISON CO.
TORONTO TYPE FOUNDRY CO., LTD.

SEYBOLD CUTTERS